WEST HARTFORD, CT 06119

BOWMAN CONSULTING
3951 WESTERRE PARKWAY | SUITE 150
RICHMOND, VA 23233
CONTACT: BRETT HAMMONDS, PE
PHONE: (804) 616-3264
EMAIL: bhammonds@bowmancg.com

J. EDWARDS & ASSOCIATES
227 STEPNEY ROAD
EASTON, CT 06612
CONTACT: JASON EDWARDS, LS
PHONE: (203) 268-4205
EMAIL: jason@jedwardsassoc.com

5. <u>GPIN(S)</u> 2991 1 61 0001

6. <u>SITE ADDRESS</u> 61 KANE STREET WEST HARTFORD, CT 06119

7. <u>ACREAGE</u>
PARCEL: <u>±1.266 AC</u>
DISTURBANCE: <u>±1.20 AC.</u>

8. <u>ZONING:</u> IR – RESTRICTED INDUSTRIAL

9. PROPOSED LAND USE:

MOTOR VEHICLE SALES (PERMITTED BY RIGHT IN IR DISTRICT)

10. <u>PREVIOUS APPROVAL:</u> UNKNOWN

11. <u>UTILITIES:</u>
WATER: <u>METROPOLITAN DISTRICT COMMISSION (MDC)</u>
SEWER: <u>METROPOLITAN DISTRICT COMMISSION (MDC)</u>

12. PARKING SCHEDULE:

12.A. # SPACES REQUIRED: 9 SPACES

12.B. BASIS FOR PARKING CALCULATIONS:

RETAIL SPACE: 600 SF @ 1 / 150 GFA = 4 SPACES

OFFICE SPACE: 1,250 SF @ 1 / 250 GFA = 5 SPACES

TOTAL: 9 SPACES

12.C. # TOTAL SPACES PROVIDED: 27 SPACES

12.D. # ACCESSIBLE SPACES PROVIDED: 2 SPACES

14. WETLANDS INFORMATION:

14.A. REGULATED AREA: ±37,500 SF

15. PROPOSED BUILDING INFORMATION:

15.A. GROSS FLOOR AREA: 5,800 SF

15.B. HEIGHT: 44.25'

15.C. STORIES: 1 STORY

16. SETBACK/BUFFERS:

17.C. FLOOR AREA RATIO (F.A.R.): _____11%

16.B. SIDE: 10-FT, WITH TYPE A SCREENING
16.C. REAR: 10-FT, WITH TYPE A SCREENING
17. SITE CALCULATIONS: 17.A. BLDG COVERAGE (EXISTING): 10% (PROPOSED): 10%

17.B. LOT COVERAGE (EXISTING): 70% (PROPOSED): 72%

16.A. FRONT: <u>20-FT VERANDA, 25-FT BUILDING LINE</u>



PROPOSED CUSTOMER CENTER

61 KANE ST TOWN OF WEST HARTFORD, CT

PLAN SET FOR:

(1) SITE PLAN REVIEW

(2) SFHA APPLICATION

(3) IWWA REGULATED ACTIVITY SUBMISSION



Sheet Number	Sheet Title
C0.0	COVER SHEET
CO.1	GENERAL NOTES
S-1	ALTA & NSPS LAND TITLE SURVEY
C1.0	SITE & UTILITY DEMOLITION PLAN
C2.0	EROSION & SEDIMENT CONTROL PLAN - PHASE I
C2.1	EROSION & SEDIMENT CONTROL PLAN PHASE II
C2.2	EROSION & SEDIMENT CONTROL NOTES & DETAILS
C3.0	SITE LAYOUT & MATERIALS PLAN
C3.1	TRUCK TURNING EXHIBIT
C4.0	UTILITY PLAN
C5.0	GRADING PLAN
C6.0	PRE-DEVELOPMENT DRAINAGE MAP
C6.1	POST-DEVELOPMENT DRAINAGE MAP
C6.2	STORMWATER MANAGEMENT & SFHA COMPLIANCE
C7.0	SANITARY & STORM SEWER PROFILES
C8.0	CONSTRUCTION DETAILS
C8.1	UTILITY DETAILS
C8.2	DRAINAGE DETAILS
C9.0	SITE LIGHTING PLAN
C9.1	SITE LIGHTING DETAILS
L1.00	PRELIMINARY LANDSCAPE PLAN
L1.10	LANDSCAPE NOTES AND DETAILS
G 1.0	GEOTECHNICAL RECOMMENDATIONS AND BORING LOGS
GI.1	GEOTECHNICAL BORING LOGS
R1	RETAINING WALL DESIGN SHEET 1
R2	RETAINING WALL DESIGN SHEET 2
R3	WALL DESIGN CALCULATIONS AND QUANTITIES
SD.0	FLOOR AND ROOF PLAN
SD.1	EXTERIOR ELEVATIONS (BLACK & WHITE)
SD.1	EXTERIOR ELEVATIONS (COLOR)
SD.2	DUMPSTER PLAN & ELEVATIONS
SD.3	CANOPY & PARAPET DETAILS
S.1	SIGNAGE PLANS (1-4 OF 6)
S.2	SIGNAGE PLANS (5-6 OF 6)



THE UNDERGROUND UTILITIES SHOWN, IF ANY, HAVE BEEN LOCATED FROM VISIBLE FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES HEREBY DECLARE THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

C.B.Y.D. 1-800-922-4455

UTILITY CONTACTS & SUPPLIERS

WATER - METROPOLITAN DISTRICT OF CT - 860-278-7850

SEWER - METROPOLITAN DISTRICT OF CT - 860-278-7850

ELECTRIC - EVERSOURCE & CONSTELLATION ENERGY - 888-544-4826

GAS - CONNECTICUT NATURAL GAS - 860.727.3000

	CONSTRU	DATE							
PLAN APPROVAL SUMMARY									
DESCRIPTION		NO.							
1st Plan resubmittal to Town						$\stackrel{\smile}{\sim}$	Т	_	_
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CARVANA - PROPOSEI
PLAN SET FOR SITE F

SCRIPTION
SCRIPT

D CUSTOMER CENTER PLAN, SFHA, & IWWA

SHEET

GENERAL NOTES

- TOPOGRAPHY SURVEY WAS PREPARED BY J EDWARDS & ASSOCIATES, BOUNDARY SURVEY BY J EDWARDS & ASSOCIATES.
- 2. THE CONTRACTOR SHALL CONTACT CONNECTICUT 811 OR 1-800-922-4455, UTILITY COMPANY REPRESENTATIVES, PERFORM TEST PITS, REVIEW CURRENT TEST PIT DATA, AND WHATEVER OTHER OPERATIONS AVAILABLE TO INSURE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES IN THE AREA OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY BOWMAN CONSULTING GROUP, LTD. OF ANY POTENTIAL CONFLICTS PRIOR TO COMMENCING CONSTRUCTION.
- 3. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND MAKE ALL INSPECTIONS NECESSARY IN ORDER TO DETERMINE THE FULL EXTENT OF THE WORK REQUIRED TO MAKE THE PROPOSED WORK CONFORM TO THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE NATURE AND LOCATION OF THE WORK, CONDITIONS, AND CONFORMATION AND CONDITION OF EXISTING GROUND SURFACE AND THE CHARACTER OF THE EQUIPMENT AND FACILITIES NEEDED PRIOR TO AND DURING PROSECUTION OF THE WORK. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE CHARACTER, QUANTITY AND QUALITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED. ANY INACCURACIES OR DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS MUST BE BOUGHT TO THE OWNER'S ATTENTION IN ORDER TO CLARIFY THE EXACT NATURE OF THE WORK TO BE PERFORMED PRIOR TO THE COMMENCEMENT OF ANY WORK.
- 4. UTILITY COMPANIES SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF ANY EXCAVATION.
- 5. ALL UNDERGROUND UTILITIES WITHIN THE STREET RIGHT-OF-WAY SHALL BE INSTALLED TO THE REQUIRED DISTANCE BEYOND THE RIGHT-OF-WAY LINE PRIOR TO THE INSTALLATION OF ANY SUBBASE MATERIAL, CURB AND GUTTER OR SIDEWALK.
- 6. ADDITIONAL SILTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS DIRECTED BY THE INSPECTOR DURING FIELD REVIEW.
- 7. ALL SURFACED STREETS SHALL BE MAINTAINED IN A CLEAR CONDITION; FREE OF DUST, MUD OR SNOW AT ALL TIMES. THE DEVELOPER SHALL PROVIDE ADEQUATE MEANS TO CLEAN TRUCKS AND OTHER EQUIPMENT BEFORE EXITING THE CONSTRUCTION SITE ONTO A SURFACE STREET. THE SHARED SURFACE STREET SHALL MAINTAIN AT LEAST A 15' WIDE CLEAN SEGMENT OF PAVEMENT FOR SHARED VEHICULAR TRAFFIC.
- 8. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTMENTS AND/OR RECONSTRUCTION OF ALL UTILITY COVER (MANHOLE FRAMES AND COVERS, VALVE BOX COVERS, ETC.) TO MATCH THE FINISHED GRADES OF THE AREAS EFFECTED BY THE CONSTRUCTION.
- 9. THE CONTRACTOR MUST HAVE THE APPROVED CONSTRUCTION DRAWINGS IN POSSESSION PRIOR TO THE START OF CONSTRUCTION. AT LEAST ONE (1) COPY OF THE APPROVED PLANS, WITH REVISIONS, MUST BE KEPT ON—SITE AT ALL TIMES.
- 10. THESE PLANS MAKE NO REPRESENTATION AS TO THE SUBSURFACE CONDITIONS AND THE PRESENCE OF SUBSURFACE WATER OR THE NEED FOR SUBSURFACE DRAINAGE FACILITIES.
- 11. STORM SEWER AND CULVERT PIPE SHALL BE REINFORCED CONCRETE PIPE TO CONFORM TO THE CURRENT A.A.S.H.T.O. DESIGNATION M170, UNLESS OTHERWISE DESIGNATED ON THESE PLANS. CLASS III PIPE AS A MINIMUM, WILL BE REQUIRED WITHIN THE LIMITS OF RIGHT-OF-WAY.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING ALL NECESSARY INSPECTIONS.
- 13. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE CONSTRUCTION SITE AND COMPLYING WITH ALL OSHA REGULATIONS.
- 14. EMERGENCY VEHICLE ACCESS SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION.
- 15. WHERE IMPROVEMENTS ARE PROPOSED WITHIN EXISTING EASEMENTS OF RECORD, THE DEVELOPER SHALL OBTAIN WRITTEN PERMISSION FROM THE AUTHORITIES THAT ARE DOMINANT TENEMENTS OF THESE EASEMENTS FOR PERMIT FOR ANY DISTURBANCES WITHIN THESE AREAS PRIOR TO CONSTRUCTION.
- 16. ALL FINISHED GRADING, SEEDING, SODDING OR PAVING SHALL BE DONE IN SUCH A MANNER TO PRECLUDE THE PONDING OF WATER.
- 17. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL FEATURES OF THE PROPOSED CONSTRUCTION. FOR EXACT DETAILS AT ANY GIVEN LOCATION, SEE THE SITE PLAN SHEETS.
- 18. UNLESS OTHERWISE NOTED, ALL PIPING QUANTITIES MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, 2—DIMENSIONALLY.
- 19. ALL ACCESSIBLE RAMPS SHALL BE BUILT IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE APPLICABLE DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
- 20. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.
- 21. THE ENGINEER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK SHOWN ON THESE PLANS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.
- 22. ALL GAS LINES REQUIRE A MINIMUM OF 1 FOOT VERTICAL AND 5 FEET HORIZONTAL SEPARATION. CONSTRUCTION WITHIN 10 FEET OF THE GAS LINE REQUIRES A GAS LINE REPRESENTATIVE TO BE PRESENT DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE GAS COMPANY PRIOR TO CONSTRUCTION.
- 23. NO TREES SHALL BE PLANTED IN THE WATER AND SEWER EASEMENTS.
- 24. UNLESS OTHERWISE NOTED HEREIN, CONSTRUCTION OF PAVEMENT AND DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE CTDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, AND TOWN OF WEST HARTFORD SPECIFICATIONS AND DETAILS.
- 25. UNLESS OTHERWISE NOTED HEREIN, CONSTRUCTION OF WATER AND SEWER LINES SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE PUBLIC UTILITIES STANDARDS AND SPECIFICATIONS.
- 26. UPON AWARD OF CONTRACT, THE CONTRACTOR SHALL OBTAIN THE NECESSARY LOCAL TRADE PERMITS (INCLUDING APPLICATIONS AND FEES) ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS AND IN THE CONTRACT DOCUMENTS.

MATERIALS NOTES:

ALL MATERIALS AND CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE APPLICABLE DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

DISABLED ACCESS NOTES

- 1. THE DESIGN PROFESSIONAL SIGNING THIS DOCUMENT REPRESENTS THAT TO THE BEST OF HIS/HER PROFESSIONAL JUDGMENT, KNOWLEDGE, AND BELIEF THE DESIGN SPECIFICATIONS HEREIN COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
- 2. ALL GRADES/SLOPES SHOWN ON THIS PLAN WERE DESIGNED AT OR BELOW MAXIMUMS ALLOWED BY THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES, AND THE AMERICANS WITH DISABILITIES ACT (ADA) DESIGN MANUAL. IN THE EVENT THAT A DESIGN QUESTION SHOULD ARISE, OR A FIELD CONDITION PRESENT ITSELF THAT IS DIFFERENT FROM THOSE SHOWN ON THESE PLANS, WORK SHOULD CEASE AND THE ENGINEER SHOULD BE NOTIFIED SO THAT AN ACCEPTABLE SOLUTION CAN BE DETERMINED.
- 3. THE CONTRACTOR IS ADVISED TO CAREFULLY CHECK ALL THE PHASES OR WORK RELATING TO ADA ACCESSIBILITY FOR THIS PROJECT. SINCE THE CODE DOES NOT ALLOW FOR CONSTRUCTION TOLERANCE, ANY CONSTRUCTION THAT EXCEEDS MAXIMUM OR MINIMUM DIMENSIONS AND SLOPES AS REQUIRED BY AMERICANS WITH DISABILITIES ACT ARE SUBJECT TO REJECTION AND MAY BE REQUIRED TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 4. SINCE THE CIVIL ENGINEER OR SURVEYOR CANNOT CONTROL THE EXACT METHODS OR MEANS USED BY THE GENERAL CONTRACTOR OR THEIR SUBCONTRACTORS DURING GRADING AND CONSTRUCTION OF THE PROJECT, THE CIVIL ENGINEER OR SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE FINAL ACCEPTANCE OF AMERICANS WITH DISABILITIES ACT ACCESSIBILITY RELATED ITEMS BY THE COUNTY, ANY OTHER AUTHORITY, OR OTHER AFFECTED PARTIES.

EARTHWORK NOTES:

REFER TO GEOTECHNICAL ENGINEERING SERVICES REPORT FOR PROPOSED CARVANA CAR VENDING MACHINE TOWER, PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC., DATED MARCH 16, 2020 (PSI PROJ 08061161) AND PAGES G1.0 — G1.1 FOR ALL GEOTECHNICAL RECOMMENDATIONS, BORING LOGS, AND NOTES.

TEMPORARY TRAFFIC CONTROL (GENERAL NOTES)

- 1. UNLESS OTHERWISE APPROVED OR DIRECTED BY THE TOWN ENGINEER, THE CONTRACTOR SHALL PLAN AND EXECUTE THE WORK IN ACCORDANCE WITH THE FOLLOWING:
- GENERALLY, CONSTRUCTION ACTIVITIES WILL BE CONDUCTED WHILE KANE ST TRAVEL IS
 TEMPORARILY LIMITED. NOTIFICATION SHALL BE IN ACCORDANCE WITH THE TOWN DRIVEWAY PERMIT.

 THE CONTRACTOR CHAIL SUBMIT A MAINTENANCE OF TRAFFIC SCHEDULE INCLUDING AND
- THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC SCHEDULE, INCLUDING ALL PROPOSED LANE AND SHOULDER CLOSURES, AT LEAST TWO WEEKS PRIOR TO THE ACTUAL
- CLOSURES ARE TO BEGIN FOR REVIEW AND APPROVAL.

 THE CONTRACTOR SHALL SUBMIT THE FINAL PLAN OF ALL PROPOSED LANE AND SHOULDER CLOSURES BY THE CLOSE OF BUSINESS WEDNESDAY FOR WORK IN THE FOLLOWING WEEK.
- AN ONSITE REVIEW OF THE PROJECT'S WORK ZONE TRAFFIC CONTROL BY THE PROJECT MANAGEMENT TEAM, TOWN TRAFFIC ENGINEER AND CONTRACTOR SHALL BE CONDUCTED WITHIN 24
- MANAGEMENT TEAM, TOWN TRAFFIC ENGINEER AND CONTRACTOR SHALL BE CONDUCTED WITHIN HOURS OF ANY FATAL INCIDENT/CRASH WITHIN THE WORK ZONE.
- PERIODIC WORK ZONE REVIEWS SHALL BE CONDUCTED JOINTLY BY THE PROJECT MANAGEMENT TEAM, TOWN TRAFFIC ENGINEER AND CONTRACTOR.
- ALL TRAFFIC CONTROL DEVICES AND SIGNS NECESSARY FOR THE MAINTENANCE OF TRAFFIC ARE
 TO BE SUPPLIED, INSTALLED, AND MAINTAINED AND REMOVED BY THE CONTRACTOR.
 ALL TRAFFIC CONTROL DEVICE LOCATIONS SHALL BE MARKED BY THE CONTRACTOR AND REVIEWED
- BY THE TOWN TRAFFICENGINEER PRIOR TO INSTALLATION.

 CONSTRUCTION WORK ALONG KANE STREET REQUIRES THE USE OF TOWN OF WEST HARTFORD

 ROLLES FOR TRAFFIC CONTROL OF RESPECT OF TOWN OF WEST HARTFORD

 ROLLES FOR TRAFFIC CONTROL OF RESPECT OF TOWN OF WEST HARTFORD
- POLICE FOR TRAFFIC CONTROL IF DEEMED NECESSARY BY THE TOWN TRAFFIC ENGINEER.
- 2. ALL TRAFFIC MAINTENANCE AND CONTROL DEVICES, METHODS AND APPLICATIONS SHALL CONFORM TO THE FOLLOWING PUBLICATIONS INCLUDING ALL CURRENT EDITIONS AND REVISIONS:
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS ISSUED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION (MUTCD).

3. WORK HOURS IN ROADWAY OPEN TO TRAFFIC AND/OR PEDESTRIAN AREA:

- MONDAY THROUGH SATURDAY: WORK WILL BE COMPLETED BETWEEN THE HOURS OF 8:30 AM AND 4:00 PM ONLY.
- SUNDAYS AND HOLIDAYS: NO WORK MAY BE COMPLETED IN THE ROADWAY OR PEDESTRIAN AREAS UNLESS OTHERWISE NOTED OR APPROVED IN WRITING BY THE OWNER.
- ADDITIONAL RESTRICTIONS MAY APPLY BASED ON TRAFFIC CONDITIONS.
 EXTENDED WORK HOURS AND WORK DAYS MAY BE REQUESTED WITH A WRITTEN REQUEST TO THE OWNER. THIS REQUEST MUST BE SUBMITTED AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE EXTENDED WORK PERIODS.
- SINGLE LANE CLOSURES ARE TO BE COMPLETED BETWEEN THE HOURS OF 8:300 AM AND 4:00 PM MONDAY THROUGH FRIDAY.

4. TRAFFIC CONTROL PLANS:

TRAFFIC CONTROL PLANS ARE INCLUDED IN THE CONSTRUCTION PLANS FOR THE REFERENCED PROJECT; HOWEVER, FIELD CONDITIONS MAY REQUIRE MODIFICATIONS.

IF THE CONTRACTOR FEELS THAT THE TRAFFIC CONTROL PLAN(S) INCLUDED WITH THIS PROJECT DOES NOT SUIT CONDITIONS AT A WORK SITE, THEN THE CONTRACTOR SHALL SUBMIT TO THE OWNER A REVISED PLAN TO MAINTAIN TRAFFIC. THE REVISED PLAN SHALL INCLUDE SITE SPECIFIC TRAFFIC DETAILS AND SHALL IDENTIFY THE SEQUENCE OF CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT THE REVISED TRAFFIC CONTROL PLAN(S) A MINIMUM 10 CALENDAR DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR WILL NOT DISRUPT TRAFFIC PATTERNS UNTIL THE OWNER HAS APPROVED THE REVISED TRAFFIC CONTROL PLAN.

THE OWNER RESERVES THE RIGHT TO MODIFY ANY TRAFFIC CONTROL PLAN(S) AS NECESSARY IN THE INTEREST OF PUBLIC SAFETY OR TRAFFIC EFFICIENCY. PRIOR TO BEGINNING WORK, IT IS THE CONTRACTORS RESPONSIBILITY TO INSURE THAT ALL REQUIREMENTS HAVE BEEN MET AND THAT ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED ACCORDING TO THE APPROVED TRAFFIC CONTROL PLAN(S)

5. THE CONTRACTOR SHALL CHECK ALL TRAFFIC MAINTENANCE AND CONTROL DEVICES AND WORK ZONES BEFORE, DURING, AND AFTER EACH WORK DAY TO ENSURE PROPER OPERATION. ON WEEKENDS, HOLIDAYS, OR ANY NON-WORKING DAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE TRAFFIC MAINTENANCE AND CONTROL DEVICES DAILY FOR PROPER OPERATION.

6. TEMPORARY LANE WIDTHS ARE NOT TO BE LESS THAN THE EXISTING LANE WIDTH (DESIRABLE 11' MINIMUM) WITHOUT CONCURRENCE OF THE REGIONAL TRAFFIC ENGINEER.

7. NO OBJECTS, EQUIPMENT, OR STORED MATERIALS MAY INTERFERE WITH SIGHT DISTANCE OF ENTRANCES AND INTERSECTIONS.

8. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE ENTRANCES DURING OPERATIONS.

9. THE CONTRACTOR NEEDS TO CONTACT CENTRAL REGION OPERATIONS TRAFFIC SIGNALS FOR A MARK OUT OF THE TRAFFIC SIGNAL EQUIPMENT A MINIMAL OF 72 HOURS PRIOR TO WORK BEGINNING WHEN WORKING WITHIN 1,000 FEET OF A TRAFFIC SIGNAL.

10. TWO-WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION UNLESS TRAFFIC ENGINEERING HAS APPROVED ANOTHER ALTERNATIVE FOR TRAFFIC CONTROL, SUCH AS A LANE CLOSURE OR A TEMPORARY STREET CLOSURE. RESIDENT AND EMERGENCY ACCESS WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION REGARDLESS IF A STREET CLOSURE IS IN EFFECT OR NOT.

11. IF THERE IS AN APPROVAL FROM TRAFFIC ENGINEERING FOR A LANE CLOSURE OR A TEMPORARY STREET CLOSURE, ALL LANES OF TRAFFIC WILL BE REOPENED TO TRAFFIC AT THE CONCLUSION OF EACH CONSTRUCTION DAY UNLESS A 24-HOUR TEMPORARY STREET CLOSURE IS APPROVED AND IN EFFECT.

12. IN ALL CASES IN WHICH EXISTING OR ESTABLISHED TRAFFIC PATTERNS WILL BE DISRUPTED, THE CONTRACTOR WILL NOTIFY ALL AFFECTED RESIDENTS AND/OR BUSINESSES A MINIMUM OF 48 HOURS IN ADVANCE OF THE ANTICIPATED DISRUPTION BY DISTRIBUTING DOOR—TO—DOOR NOTICES. A COPY OF THE NOTICE BEFORWARDED TO TRAFFIC ENGINEERING FOR REVIEW AND APPROVAL PRIOR TO

13. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE AS REQUIRED/NEEDED TO PREVENT PONDING OF WATER ON THE ROADWAY AND ADJACENT PROPERTIES.

14. THE CONTRACTOR SHALL PROTECT ANY EXISTING GUARDRAIL AND SUPPORTS WITHIN THE CONSTRUCTION AREA FROM DAMAGE. ANY GUARDRAIL OR SUPPORTS DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO PRE—CONSTRUCTION CONDITIONS BY THE CONTRACTOR

15. AT NIGHT OR DURING NON-CONSTRUCTION HOURS, ALL EXCAVATED AREAS ARE TO BE BACKFILLED OR SECURED AND PROTECTED BY USING APPROVED SAFETY DEVICES OR MATERIALS.

16. ALL AREAS EXCAVATED BELOW EXISTING PAVEMENT SURFACES AT THE CONCLUSION OF EACH WORKDAY SHALL BE BACKFILLED TO FORM A 4:1 WEDGE AGAINST PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC. ALL COSTS FOR PLACING, MAINTAINING AND REMOVING THE 4:1 WEDGE ARE THE CONTRACTORS RESPONSIBILITY.

17. WHEN THE USE OF TYPE III BARRICADES IS REQUIRED (DAY OR NIGHT), ALL BARRICADES WILL BE EQUIPPED WITH TYPE A HIGH-INTENSITY FLASHING WARNING LIGHTS.

18. FOR CONSTRUCTION OPERATIONS LASTING MORE THAN 14 DAYS, THE CONTRACTOR WILL INSTALL ROAD WORK AHEAD (W21-4, 48" X 48") AND END ROAD WORK (G20-2A, 48" X 24") WARNING SIGNS ON 6" X 6" WOODEN GROUND MOUNTED POSTS THESE SIGNS MUST BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION WORK AND WILL BE REMOVED AFTER COMPLETION OF ALL CONSTRUCTION ACTIVITIES.

19. FOR ALL APPROVED CONSTRUCTION/TRUCK ENTRANCES, THE CONTRACTOR WILL INSTALL "TRUCKS ENTERING HIGHWAY" (48" X 48" ORANGE AND BLACK) WARNING SIGNS ON 6" X 6" WOODEN GROUND MOUNTED POSTS. THESE SIGNS WILL BE INSTALLED 500 FEET IN ADVANCE OF ALL APPROVED CONSTRUCTION ACCESS/ENTRANCE POINTS.

20. ANY TRAFFIC CONTROL DEVICES INCLUDING BUT NOT LIMITED TO PAVEMENT MARKINGS, SIGNS, AND TRAFFIC CONTROL SIGNAL EQUIPMENT DAMAGED OR DESTROYED BY THE CONTRACTOR MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE UNLESS THEIR REMOVAL OR DESTRUCTION IS CALLED FOR BY THE PLANS.

21. FOR ANY FURTHER INFORMATION ON TRAFFIC MAINTENANCE AND CONTROL REQUIREMENTS, PLEASE CONTACT TOWN STAFF.

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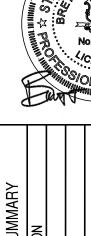
Suite 150
Richmond, Virginia 23233
Phone: (804) 616-3240
Fax: (804) 270-2008

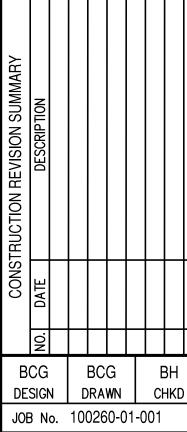
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GENERAL NOTES

/ANA - PROPOSED CUSTOMER CEN
PLAN SET FOR SITE PLAN, SFHA, & IWWA

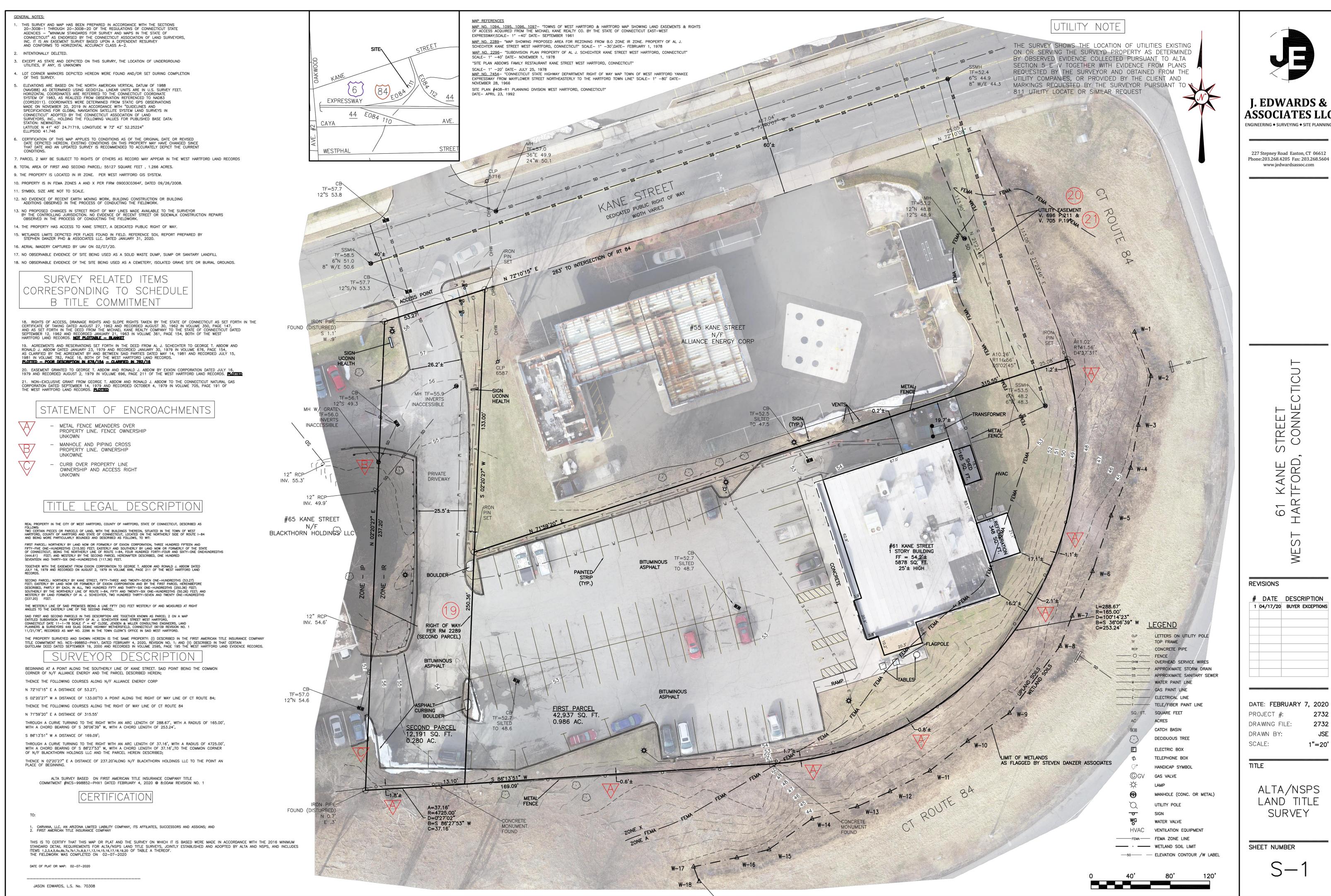
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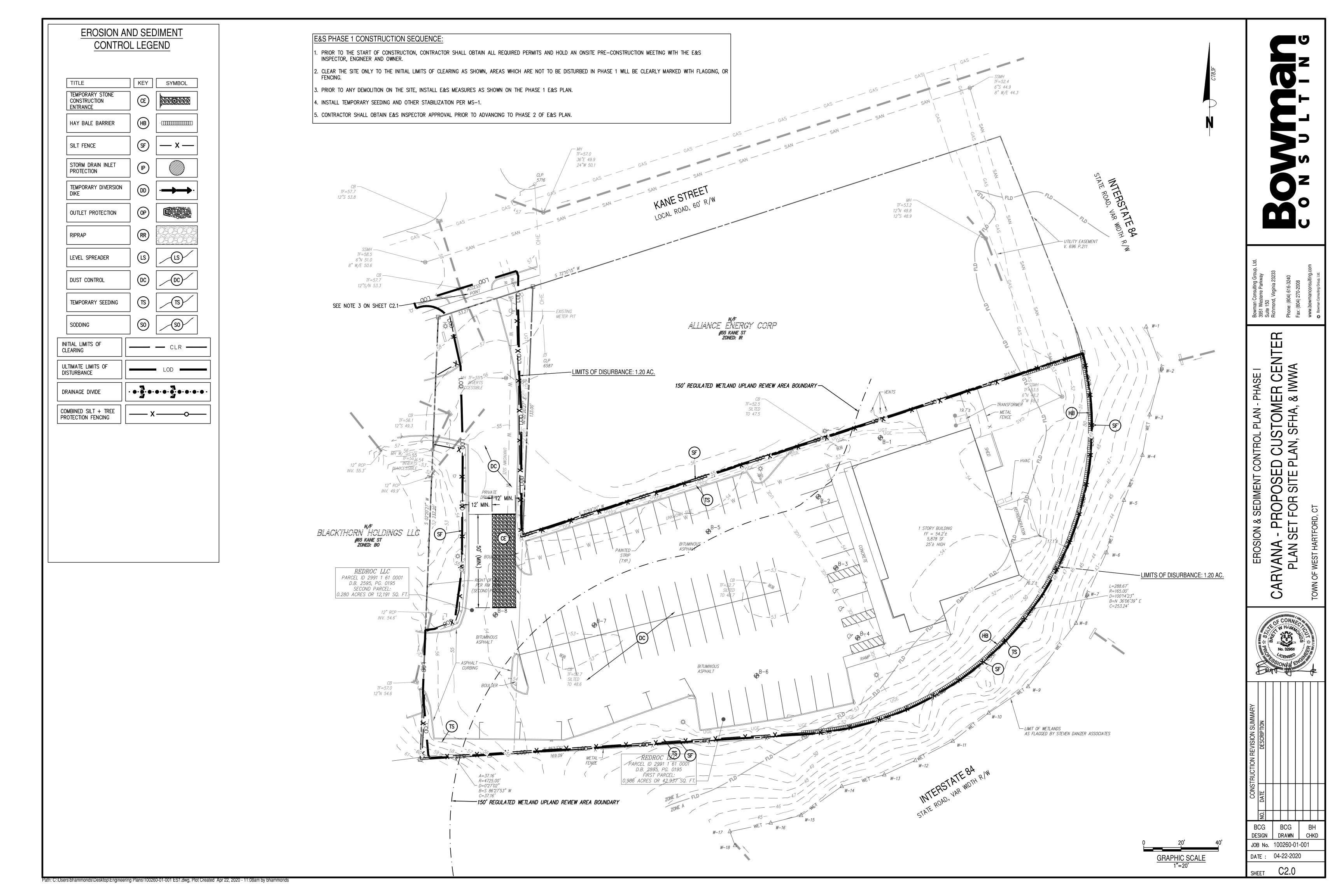


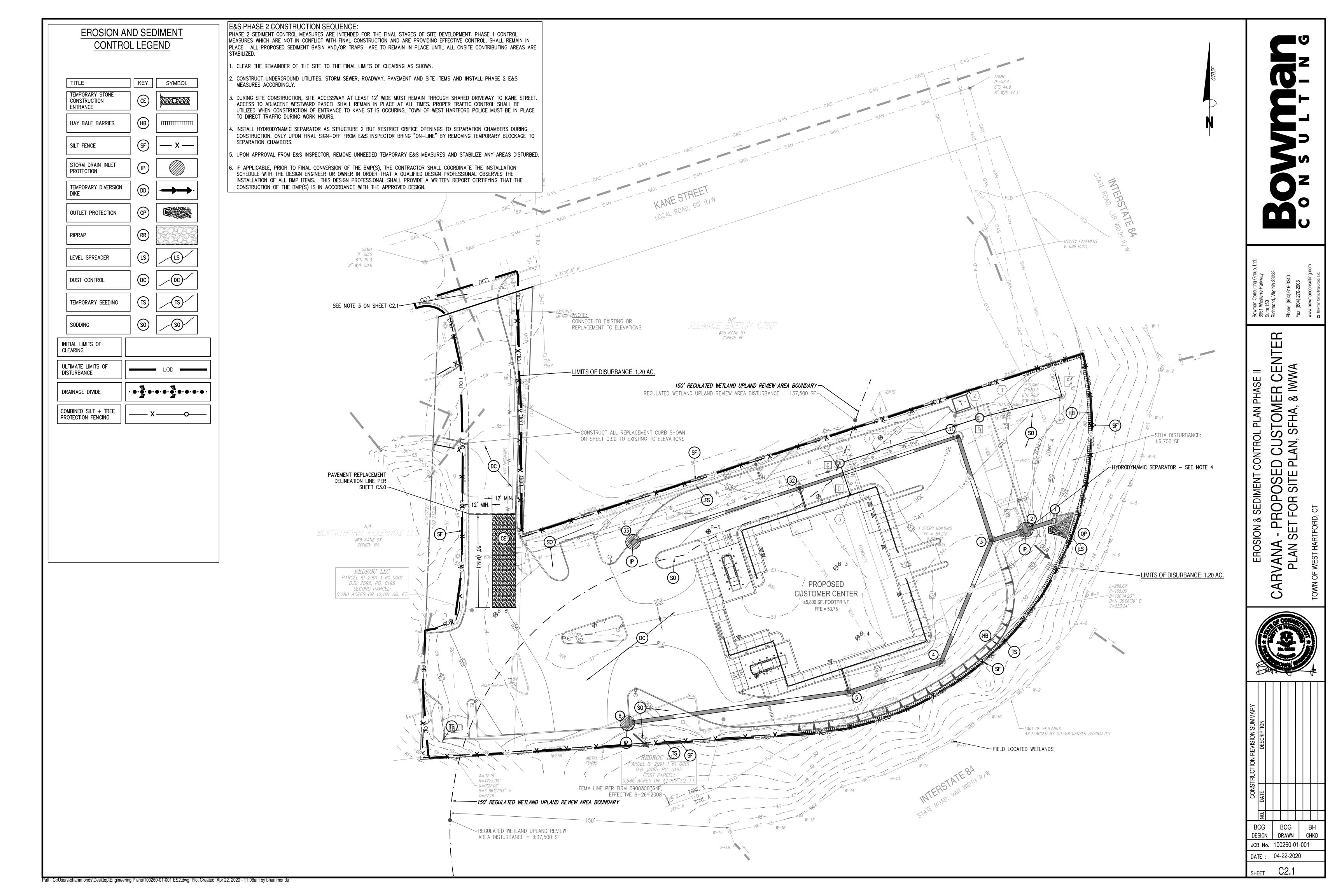
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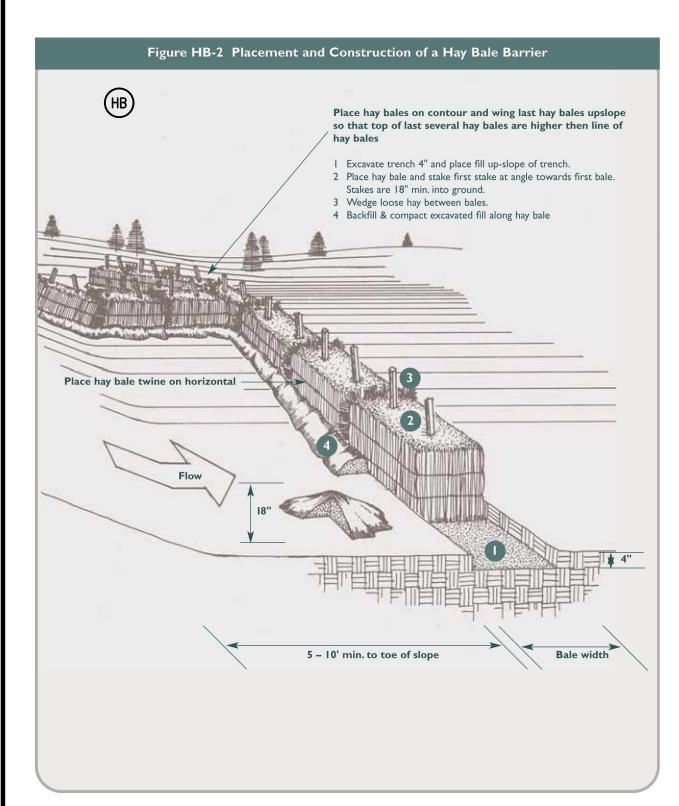


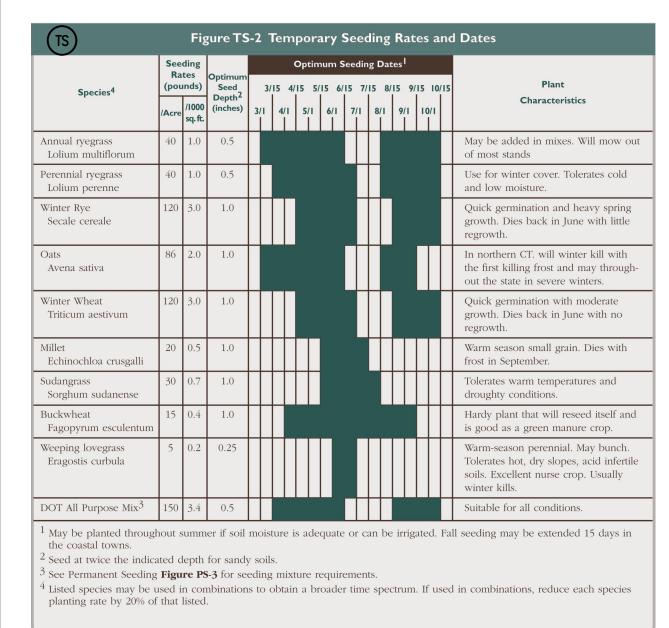
GENERAL SURVEY NOTES: THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEY AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS AN EASEMENT SURVEY BASED UPON A DEPENDENT RESURVEY AND CONFORMS TO HORIZONTAL ACCURACY CLASS A-2. INTENTIONALLY DELETED 8" W/E 44.3 EXCEPT AS STATED AND DEPICTED ON THIS SURVEY, THE LOCATION OF UNDERGROUND UTILITIES, IF ANY, IS UNKNOWN LOT CORNER MARKERS DEPICTED HEREON WERE FOUND AND/OR SET DURING COMPLETION OF THIS SURVEY. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS DETERMINED USING GEOID12a, LINEAR UNITS ARE IN U.S. SURVEY FEET. /— MH TF=57.0 HORIZONTAL COORDINATES ARE REFERRED TO THE CONNECTICUT COORDINATE 36"E 49.9 SYSTEM OF 1983, AS REALIZED FROM OBSERVATION REFERENCED TO NAD83 24"W 50.1 (CORS2011). COORDINATES WERE DETERMINED FROM STATIC GPS OBSERVATIONS MADE ON NOVEMBER 20, 2019 IN ACCORDANCE WITH "GUIDELINES AND SPECIFICATIONS FOR GLOBAL NAVIGATION SATELLITE SYSTEM LAND SURVEYS IN CONNECTICUT' ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND TF=57.7 SURVEYORS, INC., HOLDING THE FOLLOWING VALUES FOR PUBLISHED BASE DATA: 12"S 53.8 STATION: NEWINGTON TF=53.2 LATITUDE N 41° 40' 24.71719, LONGITUDE W 72° 42' 52.25224" 12"N 48.8 ELLIPSOID 41.746 12"S 48.9 CERTIFICATION OF THIS MAP APPLIES TO CONDITIONS AS OF THE ORIGINAL DATE OR REVISED DATE DEPICTED HEREON. EXISTING CONDITIONS ON THIS PROPERTY MAY HAVE CHANGED SINCE THAT DATE AND AN UPDATED SURVEY IS RECOMMENDED TO ACCURATELY DEPICT THE CURRENT UTILITY EASEMENT V. 696 P.211 TF=58.5 PARCEL 2 MAY BE SUBJECT TO RIGHTS OF OTHERS AS RECORD MAY APPEAR IN THE WEST HARTFORD 6"N 51.0 LAND RECORDS 8" W/E 50.6 3. TOTAL AREA OF FIRST AND SECOND PARCEL AREA: 55127 SQUARE FEET, 1.266 ACRES. 12"S/N 53.3 9. THE PROPERTY IS LOCATED IN IR ZONE. PER WEST HARTFORD GIS SYSTEM. EX SIDEWALK & ENTRANCE TO KANE ST TO REMAIN 10. PROPERTY IS IN FEMA ZONES A AND X PER FIRM 09003C0364F, DATED 09/26/2008. UNTIL REPLACEMENT -1. SYMBOL SIZE ARE NOT TO SCALE. METER PIT ALLIANCE ENERGY CORP #55 KANE ST . NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING EX STORM SEWER (UNKNOWN ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK. EX WATER TO BE REMOVED LOCATION TO BE DEMOED)-∠EX FENCE TO BE REMOVED & 3. NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES MADE AVAILABLE TO THE SURVEYOR REPLACED (WITH CONNDOT EX UGT + UGE LINES TO BY THE CONTROLLING JURISDICTION. NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION REPA ENCROACHMENT PERMIT) BE CUT AT TRANSFORMER OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK. & BUILDING BUT REMAIN FOR FUTURE CONNECTION 4. THE PROPERTY HAS ACCESS TO KANE ST., A DEDICATED PUBLIC RIGHT OF WAY. LIMITS OF DISURBANCE: 1.20 AC. . WETLANDS LMITS DEPICTED PER FLAGS FOUND IN FIELD. REFERENCE SOIL REPORT PREPARED BY ——EX SIGN TO REMAIN 150' REGULATED WETLAND UPLAND REVIEW AREA BOUNDARY STEPHEN DANZER PHD & ASSOCIATES LLC, DATED JANUARY 31, 2020 ASPHALT SURFACE COURSES OMEI HA, & DEMO & REPLACEMENT-16. AERIAL IMAGERY CAPTURED BY UAV ON 02/07/20. TF=52.5 TO 47.5 17. NO OBSERVABLE EVIDENCE OF SITE BEING USED AS A SLID WASTE DUMP, SUMP OR SANITARY LANDFILL. **FENCE** TF=56.1 EX CURB TO BE 12"S 49.3 REPLACED, SEE 18. NO OBSERVABLE EVIDENCE OF THE SITE BEING USED AS A CEMETERY, ISOLATED GRAVE SITE OR BURIAL SHT C3.0 MAP REFERENCES ∼EX SSWR LATER ∱ EX ABOVE GROUND WATR EX STORM SEWER (UNKNOWN MH TO BE DEMO∉D FACILITIES TO BE DEMOED-MH W/ GRATE -LOCATION TO BE DEMOED) TF=56.0 MAP NO. 1094, 1095, 1096, 1097— "TOWNS OF WEST HARTFORD & HARTFORD MAP SHOWING LAND *INVERTS* ASEMENTS & RIGHTS OF ACCESS ACQUIRED FROM THE MICHAEL KANE REALTY CO. BY THE STATE OF OSEI SITE I INV. 55.3' CONNECTICUT EAST-WEST EXPRESSWAY" & UTILITY SCALE- 1" -40' 12" RCP — INV. 49.9' • DATE- SEPTEMBER 1961 ROP(MAP NO. 2289- "MAP SHOWING PROPOSED AREA FOR REZONING FROM B.O ZONE IR ZONE. PROPERTY OF -BUILDING & ACCOMPANYING EXISTING GUARDRAIL TO BE REMOVED STRUCTURES TO BE REMOVED -AL J. SCHECHTER KANE STREET WEST HARTFORD, CONNECTICUT" SAWCUT & REPLACED (SEE SHEET C3.0)-SITE SCALE - 1" -30' BLACKTHORN HOLDINGS LLC DATE – FEBRUARY 1, 1978 S MAP NO. 2296- "SUBDIVISION PLAN PROPERTY OF AL J. SCHECHTER KANE STREET WEST #65 KANE ST ZONED: BO HARTFORD, CONNECTICUT" SCALE- 1" -40' EX CURB TO REMAIN— • DATE- NOVEMBER 1, 1978 REDROC LLC "SITE PLAN ABDOWS FAMILY RESTAURANT KANE STREET WEST HARTFORD, CONNECTICUT" -LIMITS OF DISURBANCE: 1.20 AC. 1 PARCEL ID 2991 1 61 0001 SCALE - 1" -20' D.B. 2595, PG. 0195 L=288.67' R=165.00' SECOND PARCEL: • DATE- JULY 25, 1978 D.280 ACRES OR 12,191 SQ. FT. B=N 36°06'39" E C=253.24' MAP NO. 7454 - "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF WEST HARTFORD YANKEE EXPRESSWAY FROM MAYFLOWER STREET NORTHEASTERLY TO THE HARTFORD TOWN 12" RCP -LINE"ARTFORD TOW INV. 54.6' SCALE – 1" –80' DATE— NOVEMBER 28, 1966 "SITE PLAN #408-R1 PLANNING DIVISION WEST HARTFORD, CONNECTICUT" DATE – APRIL 23, 1992 <u>LEGEND</u> TF=57.0 FEMA/TOWN FLOODPLAIN BNDY 12"N 54.6 ----- OHE --- OVERHEAD SERVICE WIRES APPROXIMATE STORM DRAIN & DIRECTION APPROXIMATE SANITARY SEWER ---- WATER PAINT LINE - LIMIT OF WETLANDS ---- GAS --- GAS PAINT LINE AS FLAGGED BY STEVEN DANZER ASSOCIATES --- ELECTRICAL LINE TELE/FIBER PAINT LINE SQUARE FEET REDROC LLC METAL — ACRES PARCEL ID 2991 1 61 0001 EX FENCE TO BE REMOVED & ELECTRIC BOX D.B. 2595, PG. 0195 FIRST PARCEL: REPLACED (WITH CONNDOT TELEPHONE BOX 0.986 ACRES OR 42,937 SQ. FT. R=4725.00' ENCROACHMENT PERMIT)-0 EXISTING IRON PIN/PIPE B=S 86°27'53" W ©GV GAS VALVE —150' REGULATED WETLAND UPLAND REVIEW AREA BOUNDARY ╬LP SS 500 MANHOLE (CONC. OR METAL) UTILITY POLE BCG BCG SIGN DESIGN DRAWN CHKD WATER VALVE JOB No. 100260-01-001 CATCH BASIN OR INLET BOLLARD DATE: 04-22-2020 **GRAPHIC SCALE** FIRE HYDRANT SHEET C1.0 BORING LOG LOCATION PER GEOTECHNICAL REPORT Path: C:\Users\bhammonds\Desktop\Engineering Plans\100260-01-001 DMO.dwg, Plot Created Apr 22, 2020 - 11:07am by bhammonds



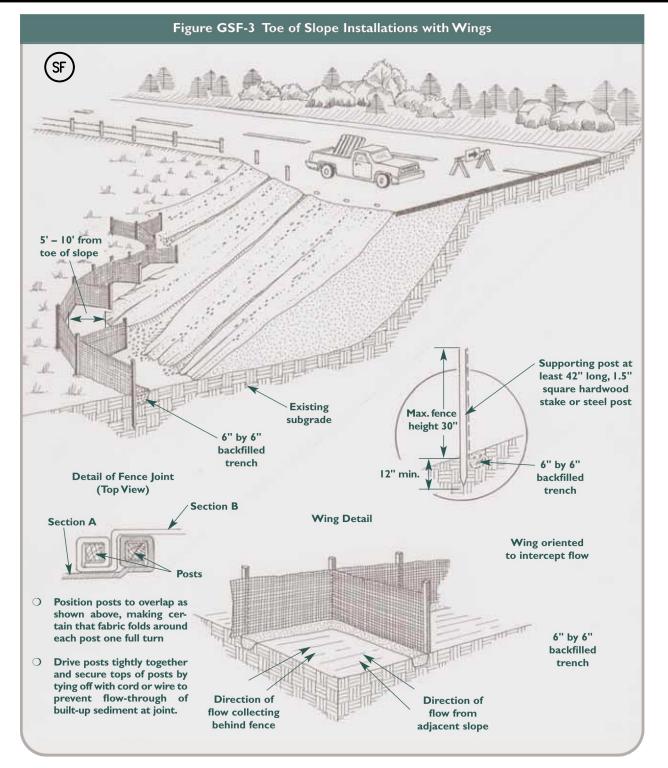


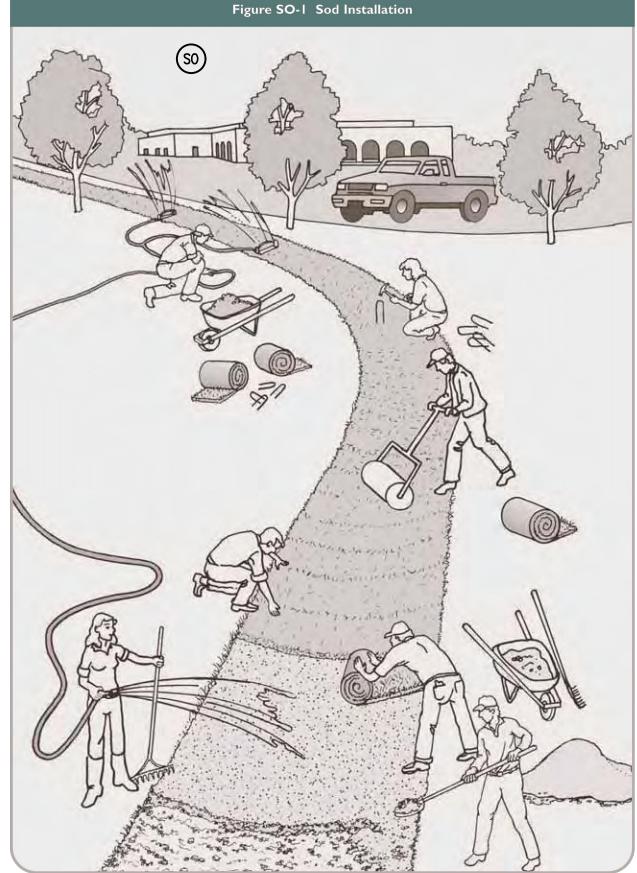
Source: USDA-NRCS

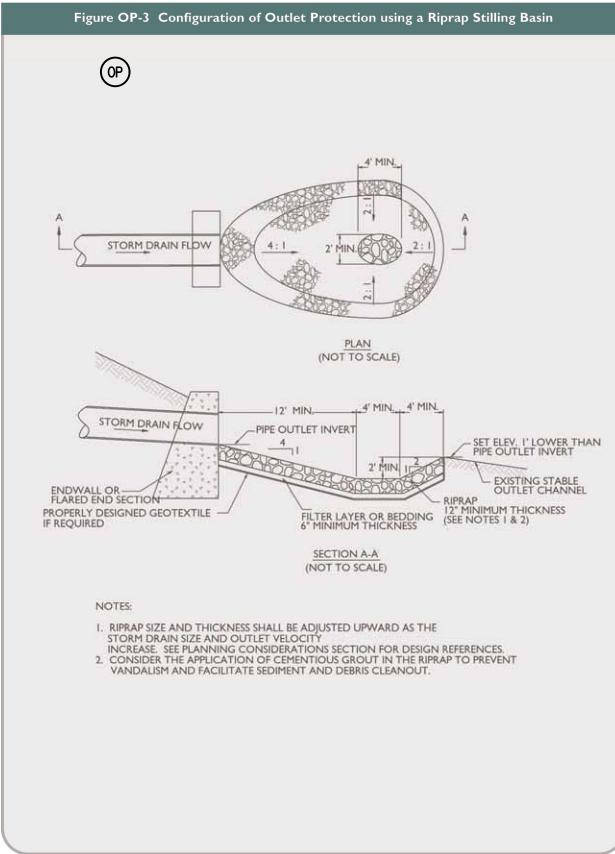




Source: USDA-NRCS







Source: USDA-NRCS

EROSION CONTROL NARRATIVE:

PROJECT DESCRIPTION:

The purpose of this project is the construction of a commercial car service center. This 1.266 acre site is located at 61 Kane ST, West Hartford, CT. The site construction will consist of a one-story, 5,800 SF building, parking areas, and lawn. A total of ±1.20 acres will be disturbed during construction.

The existing site is relatively flat and drains toward the southern boundary. Most of the existing site is developed as an existing Gold—Roc Diner with parking areas and existing improvements. Runoff currently flows towards existing catch basins and curb inlets and discharges freely to the I-84 R/W to the east.

ADJACENT AREAS:

Kane St borders the property on the north, along with an existing gas service station. On the east, UNCONN Health building (which shares an access), and on the south and the west lies Interstate 84.

OFF-SITE AREAS:

Driveway improvements will be made within the Kane St R/W, and an Encroachment Permit will be applied for with the CTDOT for fence replacement, but earthwork or E&S operations are not expected to be needed off-site.

Refer to soils data on this sheet

According to the NRCS soil survey, the soils on site are "307 — Urban Land" with a HSG designation of D.

The area within the FEMA Flood Zone A (SFHA) is a critical area, being designed with a retaining wall within the boundary. Furthermore, a majority of the site is located with the Town OF West Hartford's Upland Review Area 150' away from off-site wetlands to the southeast. Therefore, care shall be taken to minimize land disturbance draining towards the Interstate 84 property, and keep sediment trapped on the site. Measures have been provided in this area to minimize the impacts as much as possible.

EROSION AND SEDIMENT CONTROL MEASURES:

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The minimum standards of the guidelines shall be adhered to unless otherwise waived or approved by a variance.

All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final

The contractor is responsible for the installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the environmental engineering department.

STRUCTURAL PRACTICES: - Refer to plan and State Minimum Standards & Specifications.

VEGETATIVE PRACTICES — Refer to plan and State Minimum Standards & Specifications.

PERMANENT STABILIZATION:

All areas disturbed by construction shall be stabilized by applying Sod (per CT E&SC Guidelines). Should intermediate stabilization be required, Permanent Seeding per CT ES&C Guidelines shall be utilized to discourage erosion.

TOPSOIL REQUIREMENTS:

Topsoil to meet ASTM D5268 Standard Specifications: Natural, friable, fertile, fine loamy soil possessing characteristics of representative topsoil in the vicinity that produces heavy growth. Topsoil shall have a PH range of 5.5 to 7.4 percent, free from subsoil, objectionable weeds, litter, sods, stiff clay, stones larger than 1—inch in diameter, stumps, roots, trash, herbicides, toxic substances, or any other material which may be harmful to plan growth or finder planting operations. Topsoil shall contain a minimum of three percent (3%) organic material. Contractor to notify engineer, owner, and testing agency when soil is ready for testing.

STORMWATER MANAGEMENT:

See sheet C6.2 - STORMWATER MANAGEMENT & SFHA COMPLIANCE

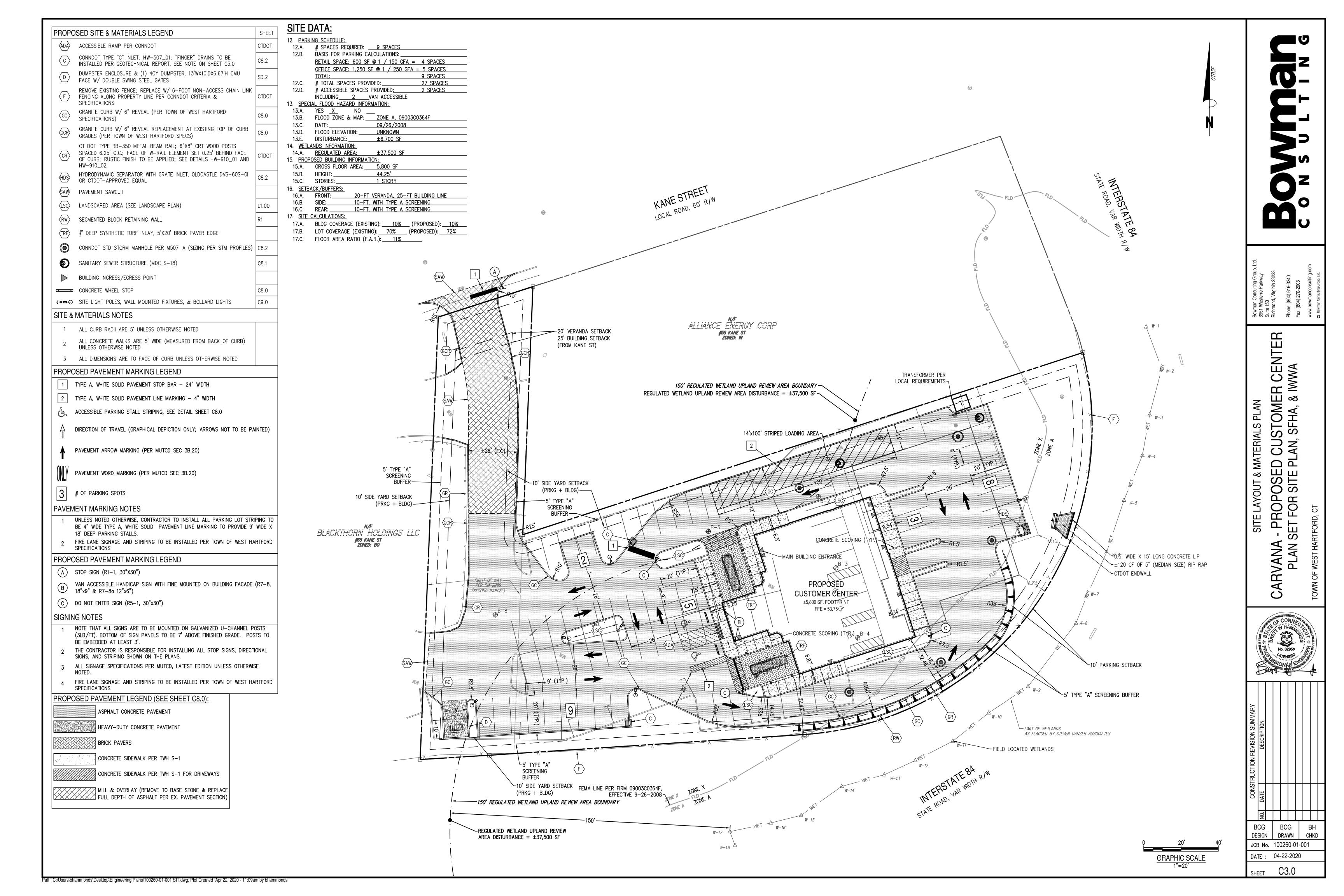
See sheet C6.2 - STORMWATER MANAGEMENT & SFHA COMPLIANCE

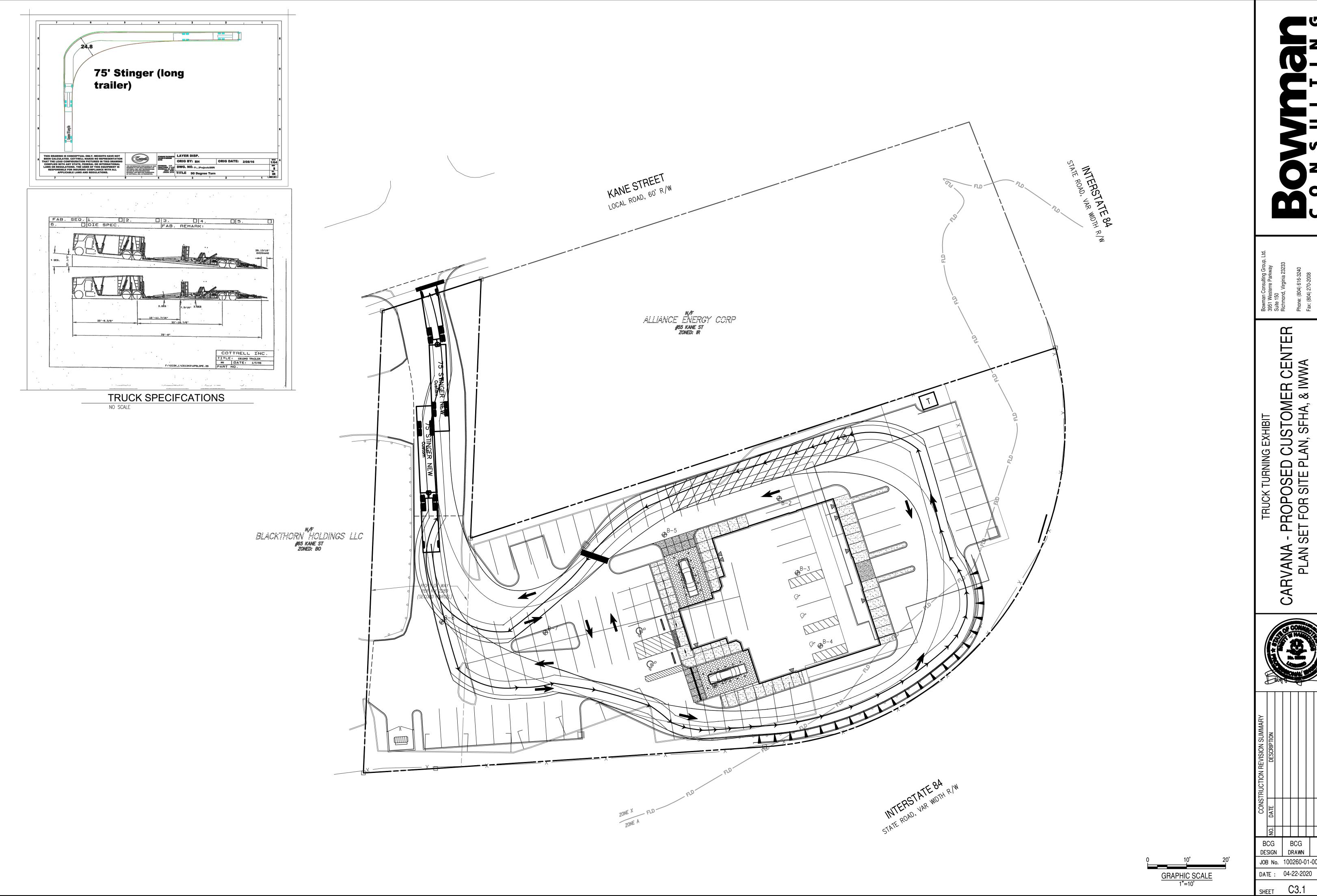
The Contractor shall inspect all erosion and sediment control measures periodically and after each runoff producing rainfall event. Any necessary repairs or clean up to maintain the effectiveness of the erosion and sediment control devices shall be made immediately. No controls are to be removed without the approval of the E&S Inspector. The Contractor shall be responsible for any damages or penalties caused by failure to comply with the erosion and sediment control program or the direction of the E&S Inspector.

CENTE ISTOMEF, SFHA, & ∞ NOTES Ž Ž S S S OSEI SITE I SEDIMENT CC PROPO(SE **ARVANA**

CONSTRUCTION REVISION SUMMARY	DESCRIPTION									
CON	DATE									
	.0N									
BCG DESIGN		,	BCG DRAWN				BH CHKD			
JOE	3 N	0.	100260-01-001							
DA ⁻	IF :		04	-22	-20	20)			

1. ALL CONSTRUCTION TECHNIQUES AND DETAILS SHALL BE IN CONFORMANCE WITH CT DEEP SOIL AND SEDIMENT CONTROL GUIDELINES.

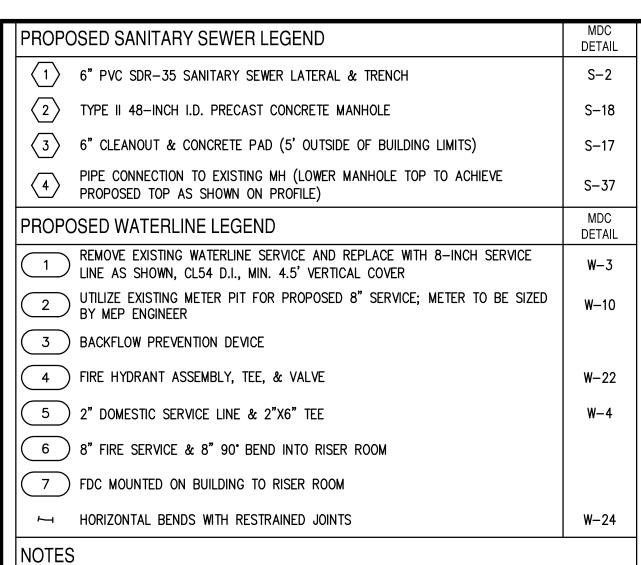




CARVANA - PROPOSED CUSTOMER CENTER
PLAN SET FOR SITE PLAN, SFHA, & IWWA

BCG BCG BH
DESIGN DRAWN CHKD

JOB No. 100260-01-001



ALL STANDARDS, CONSTRUCTION & MATERIAL SPECIFICATIONS IN ACCORDANCE WITH THE

SANITARY SEWER STRUCTURE NUMBER:

EXISTING PROPOSED 101) STORM SEWER STRUCTURE NUMBER:

METROPOLITAN DISTRICT OF HARTFORD, CT (MDC).

				29)
	STORN	/I STRU	CTURE	TABLE
NO. & TYPE	TOP	SUMP	HEIGHT	DETAILS/TYPE
1 CTDOT ENDWALL (506-01)	50.50'	48.25'	2.25'	INV. IN (W) = 48.25' (24")
2 DUAL-VORTEX SEPARATOR (DVS 60S-GI)	51.74'	42.77'	8.97'	INV. IN (W) = 48.37' (24") INV. OUT (E) = 48.27' (24")
3 CTDOT MANHOLE (M507-A)	52.12'	48.40'	3.72'	INV. IN (SW) = 48.50' (24") INV. IN (N) = 48.50' (24") INV. OUT (E) = 48.40' (24")
4 CTDOT MANHOLE (M507-A)	52.64'	48.61'	4.03'	INV. IN (W) = 48.71' (24") INV. OUT (NE) = 48.61' (24")
5 CTDOT MANHOLE (M507-A)	52.85'	48.79'	4.06'	INV. IN (W) = 48.89' (24") INV. IN (N) = 48.89' (8") INV. OUT (E) = 48.79' (24")
6 CTDOT TYPE C INLET	52.61'	49.07	3.54'	INV. OUT (E) = 49.07' (24")
31 CTDOT MANHOLE (M507-A) (60" DIA.)	52.58'	48.59'	3.99'	INV. IN (W) = 48.59' (18") INV. OUT (S) = 48.59' (24")
32 CTDOT MANHOLE (M507-A)	53.13'	48.82'	4.31'	INV. IN (W) = 49.14' (18") INV. IN (S) = 48.82' (8") INV. OUT (E) = 49.04' (18")
33 CTDOT TYPE C INLET	52.46'	49.60'	2.86'	INV. OUT (E) = 49.60' (18")
R1 STM CLEANOUT	53.61'	46.78'	6.83'	INV. IN (E) = 47.28' (4") INV. IN (W) = 46.78' (4") INV. OUT (S) = 48.89' (8")
R2 STM CLEANOUT	53.62'	47.76	5.86'	INV. IN (N) = 47.86' (4") INV. OUT (W) = 47.76' (4")
R3 STM CLEANOUT	53.65'	47.64	6.01'	INV. IN (N) = 47.64' (4") INV. OUT (S) = 47.96' (4")
R4 STM CLEANOUT	53.65'	47.79'	5.86'	INV. IN (N) = $47.89'$ (4") INV. OUT (S) = $47.79'$ (4")
R5 STM CLEANOUT	53.67'	48.00'	5.67'	INV. OUT (S) = 48.00' (4")
R10 STM CLEANOUT	53.54'	47.09'	6.45'	INV. IN (N) = 47.19' (4") INV. OUT (E) = 47.09' (4")
R11 STM CLEANOUT	53.73'	47.42'	6.31'	INV. IN (W) = 47.52' (4") INV. OUT (S) = 47.42' (4")
R12 STM CLEANOUT	53.60'	47.77	5.84'	INV. IN (N) = 47.87' (4") INV. OUT (E) = 47.77' (4")
R13 STM CLEANOUT	53.21'	47.96'	5.24'	INV. OUT (S) = 47.96' (4")
R20 STM CLEANOUT	53.66'	46.76'	6.90'	INV. IN (E) = 46.76' (4") INV. IN (W) = 47.32' (4") INV. OUT (N) = 48.82' (8")
R21 STM CLEANOUT	53.62'	47.16'	6.46'	INV. IN (S) = 47.26' (4") INV. OUT (W) = 47.16' (4")
R22 STM CLEANOUT	53.65'	47.40'	6.25'	INV. IN (S) = 47.50' (4") INV. OUT (N) = 47.40' (4")
R23 STM CLEANOUT	53.67'	48.01'	5.66'	INV. OUT (N) = 48.01' (4")
R30 STM CLEANOUT	53.63'	47.68'	5.95'	INV. IN (S) = 47.78' (4") INV. OUT (E) = 47.68' (4")
R31 STM CLEANOUT	53.74'	48.05'	5.69'	INV. OUT (N) = 48.05' (4")

3 to 2

4 to 3

5 to 4

6 to 5

31 to 3

33 to 32

R1 to 5

R2 to R1

R3 to R2

R4 to R3 R5 to R4

R10 to R1

R11 to R10

R12 to R11

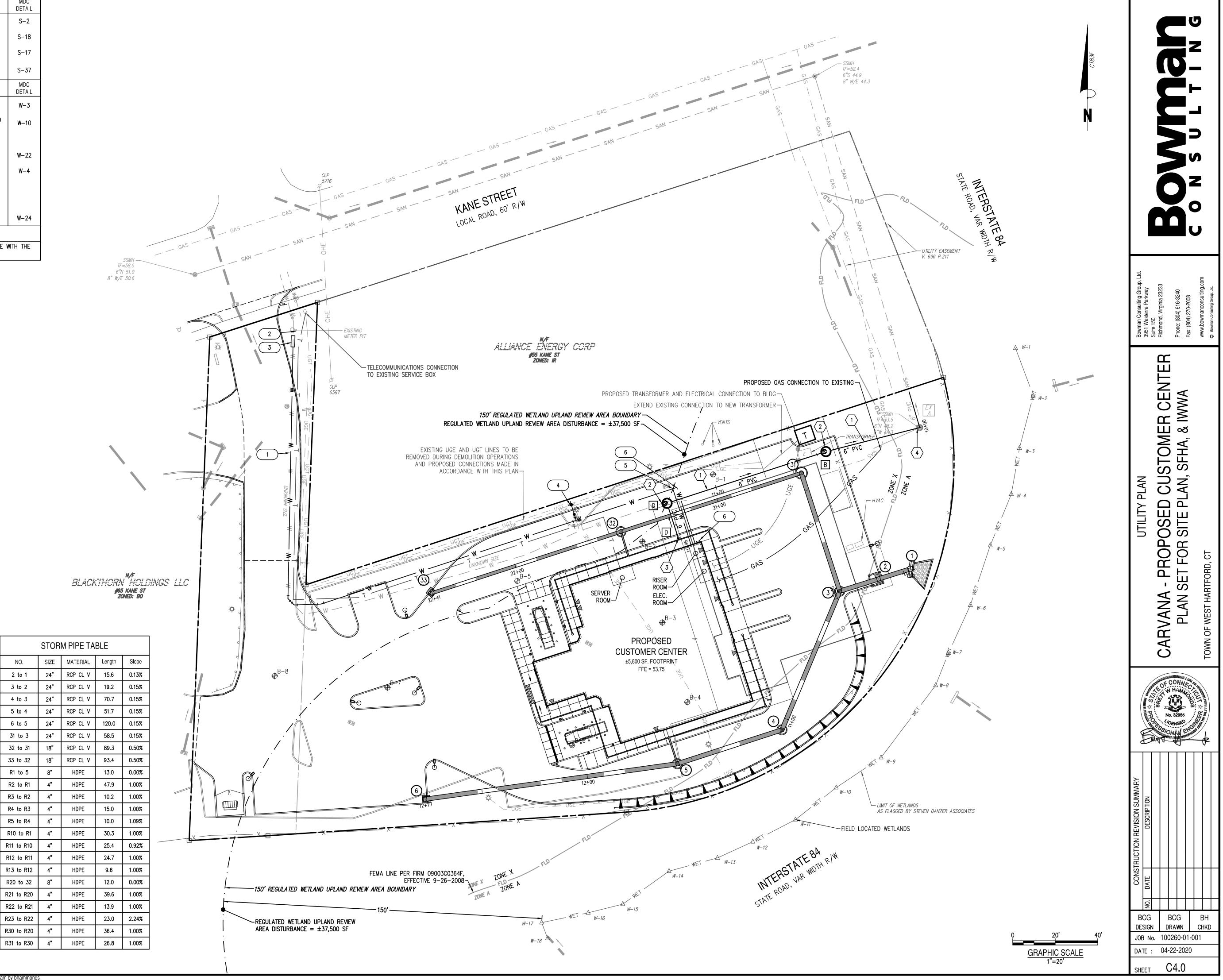
R13 to R12

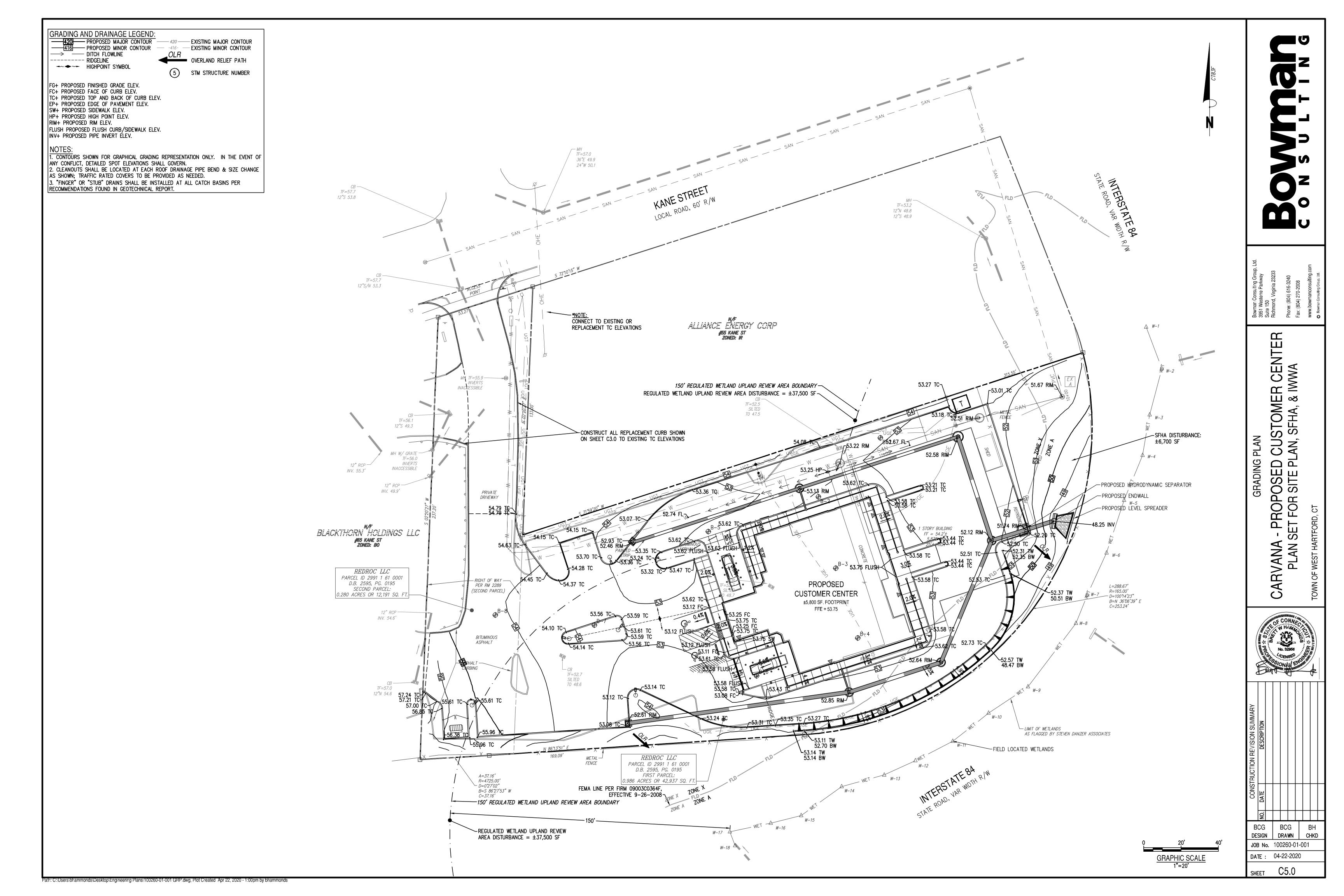
R20 to 32

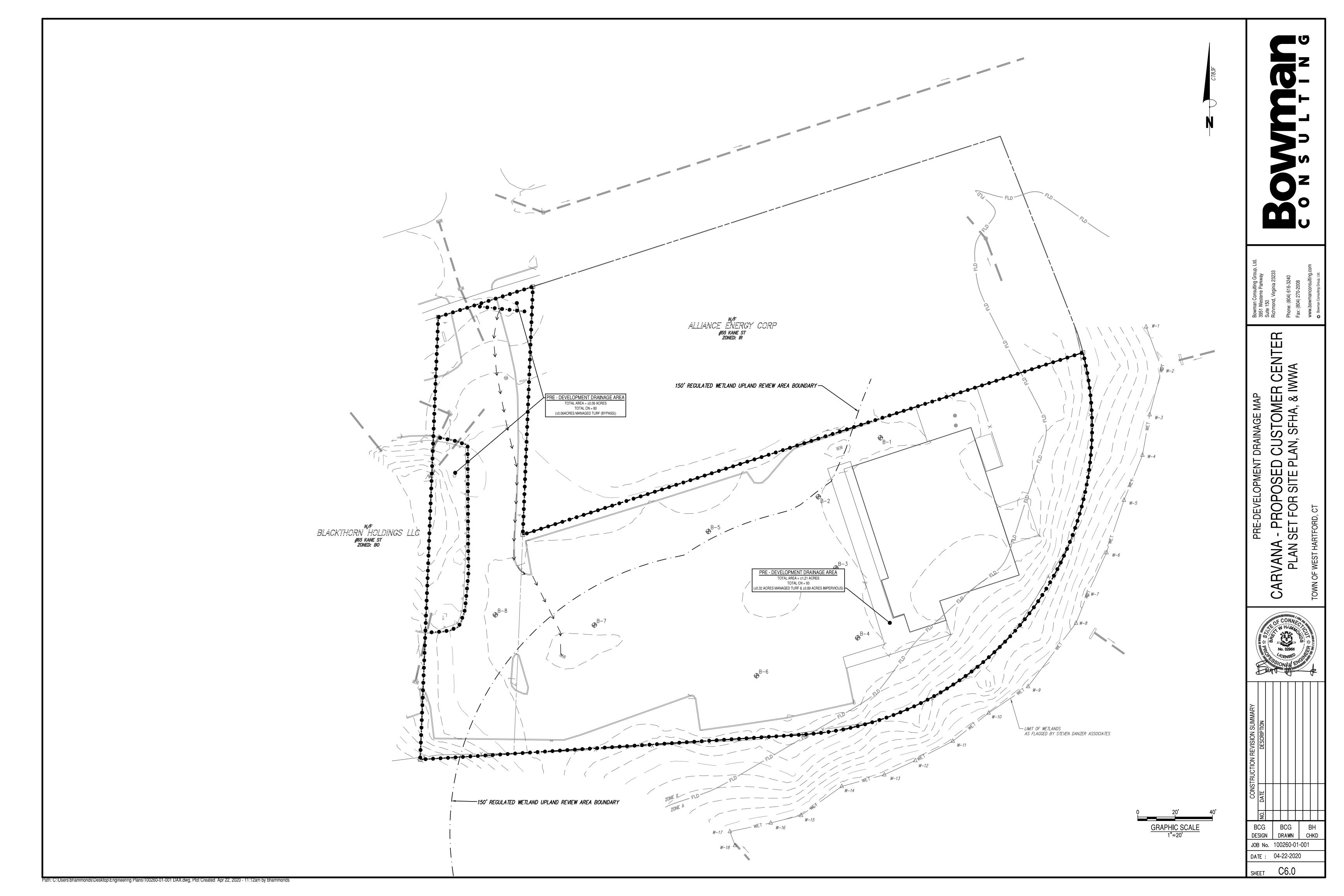
R21 to R20

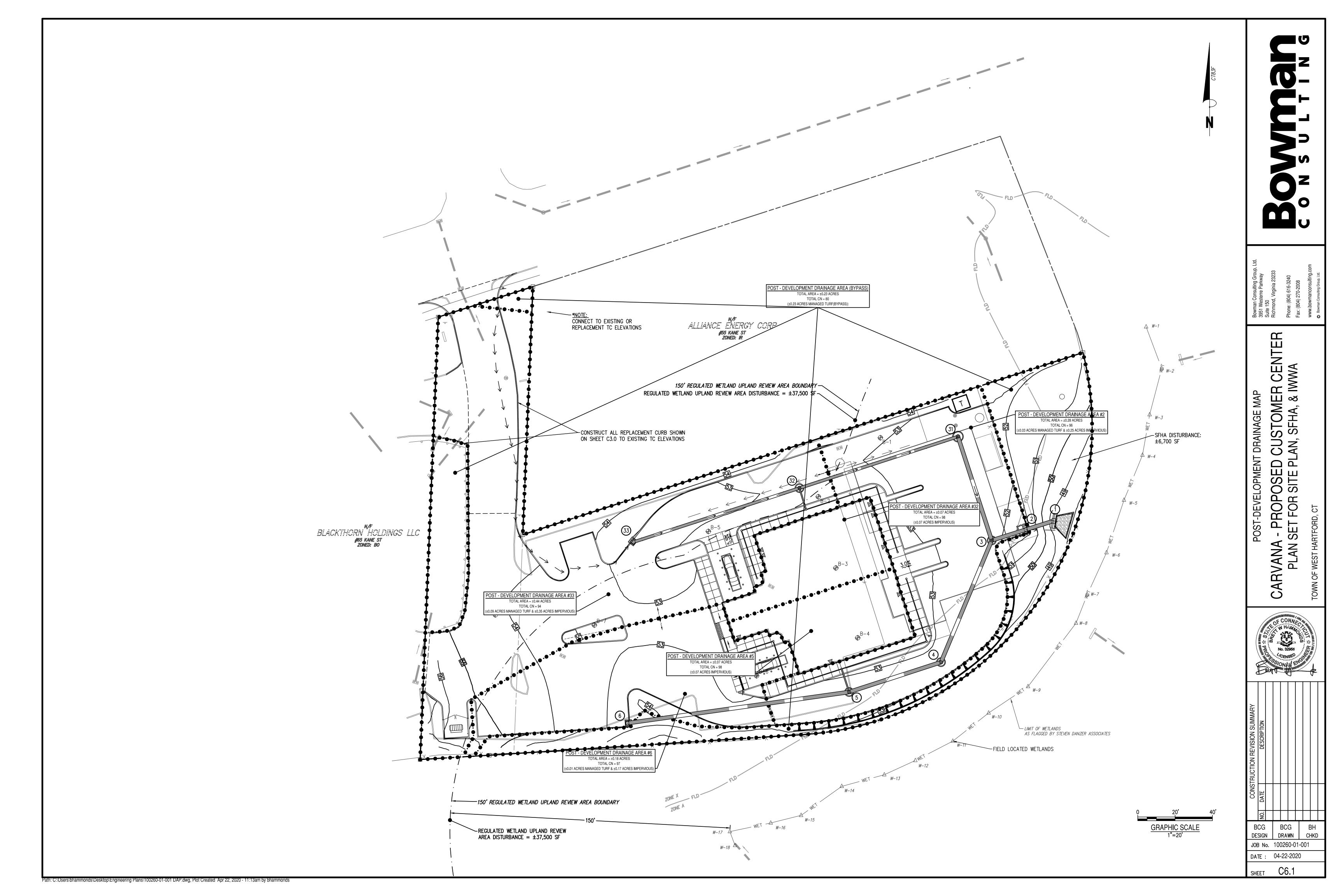
R22 to R21

R30 to R20









TO MEET THE STATE OF CONNECTICUT WATER QUALITY REQUIREMENTS, ALL DEVELOPED SITE IMPROVEMENTS WILL FLOW THROUGH A HYDRODYNAMIC SEPARATOR (STRUCTURE 2). THIS HDS WILL REMOVE FLOCCULENTS, SEPARATE OIL & WATER, AND PROVIDE A SUMP FOR SEDIMENT TO SETTLE PRIOR TO EXITING THE STORM SEWER SYSTEM.

THE QATER QUALITY VOLUME CALCULATION SHOWN BELOW IS IN ACCORDANCE WITH CHAPTER 7 OF THE CONNECTICUT STORMWATER QUALITY MANUAL. THE REQUIRED WATER QUALITY VOLUME WAS CALCULATED TO BE 3210 CF OR 0.074 AC-FT (SEE CALCULATION BELOW). THE ENTIRE WATER QUALITY VOLUME IS TREATED BY FLOWING THROUGH THE HYDRODYNAMIC SEPARATOR. A WATER QUALITY FLOW (WQF) HAS ALSO BEEN CALCULATED TO DETERMINE AN APPROPRIATELY-DESIGNED TREATMENT DEVICE, AS SHOWN ON SHEET C8.2.

DUE TO THE ENTIRE SITE'S WATER QUALITY VOLUME FLOWING THROUGH THE CONNDOT-APPROVED HYDRODYNAMIC SEPARATOR, WATER QUALITY COMPLIANCE IS ACHIEVED.

WATER QUANTITY SUMMARY:

TO MEET THE STATE OF CONNECTICUT WATER QUANTITY REQUIREMENTS, THE POST DEVELOPMENT RUNOFF FLOW WILL BE RESTRICTED TO THE PRE DEVELOPMENT FLOWS. PER CHAPTER 7 OF THE CONNECTICUT STORMWATER QUALITY MANUAL, TO MEET STREAM CHANNEL PROTECTION REQUIREMENTS THE 2-YEAR, 24 HOUR STORM IS EXAMINED. TO MEET CONVEYANCE PROTECTION REQUIREMENTS THE 10-YEAR, 24 HOUR STORM IS EXAMINED. TO MEET PEAK RUNOFF ATTENUATION THE 2, 5, 10, 25, 50, AND 100-YEAR, 24 HOUR STORMS ARE EXAMINED. HYDROCAD SOFTWARE WAS USED TO ANALYZE THESE DESIGN STORMS.

STRUCTURE 2 IS THE HYDRODYNAMIC SEPARATOR BEING MAINLY USED FOR WATER QUALITY TREATMENT, BUT COMES INSTALLED WITH AN INTERNAL WEIR INSTALLED TO RESTRICT PEAK FLOWS. THE ENTIRE SITE FLOW WILL DRAIN TOWARDS THIS INLET WHERE PEAK FLOWS ARE ATTENUATED TO PRE-DEVELOPMENT LEVELS. DETENTION IS PROVIDED IN THE STORM SEWER PIPING, OVER-DESIGNED TO ACCOMMODATE A LARGE VOLUME OF WATER AS NEEDED TO ALLOW FOR PEAK FLOW ATTENUATION. SEE TABLE BELOW FOR RUNOFF FLOW

IN SUMMARY, EACH POST-DEVELOPED DESIGN STORM RUNOFF IS REDUCED TO BELOW PRE-DEVELOPED LEVELS, COMPLYING WITH WATER QUANTITY CRITERIA.

RESULTS:
THE STORM SEWER NETWORK HAS BEEN SIZED TO MEET THE TOWN OF WEST HARTOFRD AND CONNECTICUT STORMWATER QUALITY REQUIREMENTS AND QUANTITY REQUIREMENTS.

Bowman

Richmond, VA 23233

CONSULTING 3951 Westerre Parkway Suite 150

Project Name: <u>Carvana</u> Project Number: <u>100260-01-001</u> Plans/Stage Opinion Derived: Site Plan Submittal #2 Calculated By: <u>B. Hammonds</u> Date: <u>April 20, 2020</u>

Pre- / Post-Development Analysis

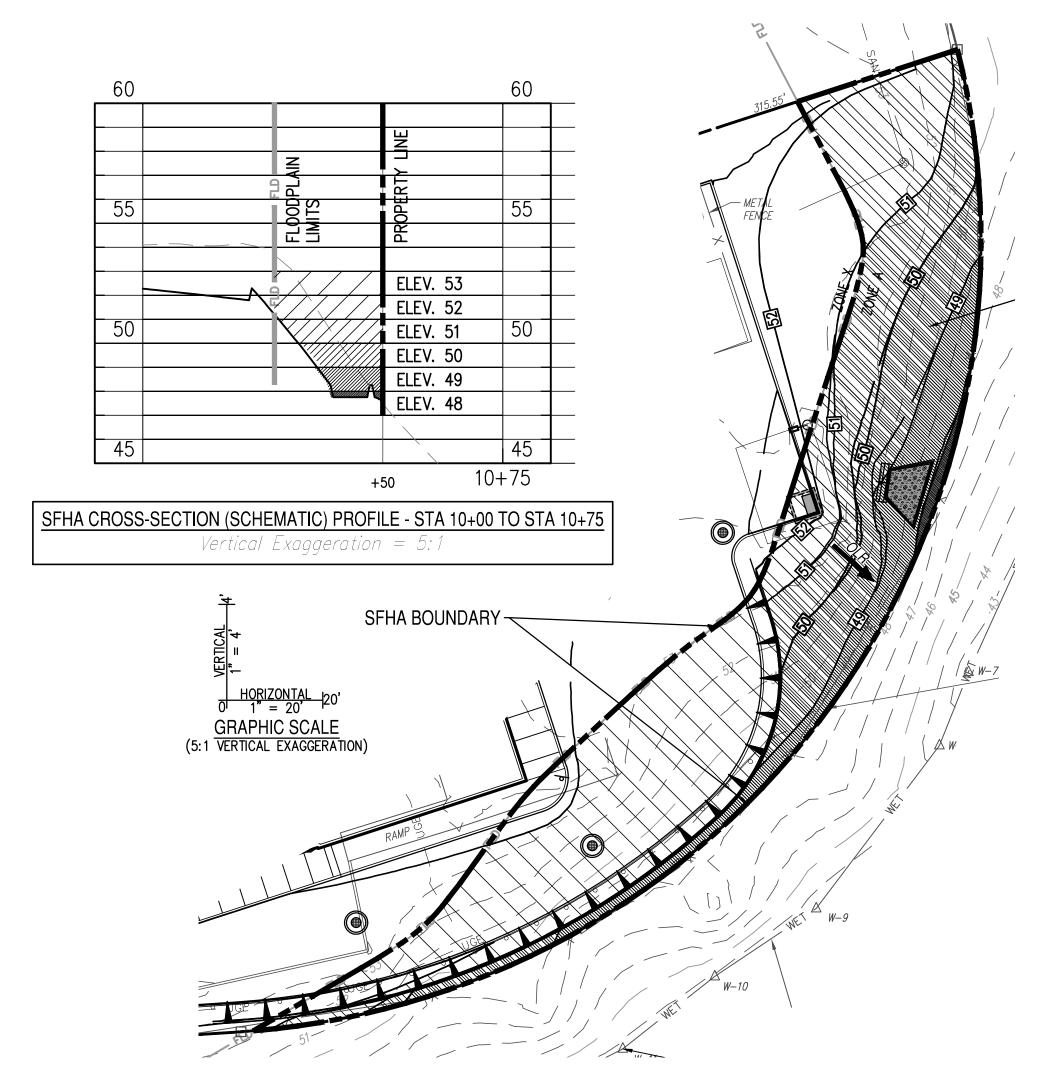
	OUTFALL POINT "A" - UNDERG	ROUND DETENTION
.en ^x	Pre-Development	Post-Development
StormEvent	Peak Flow (cfs)	Peak Flow (cfs)
2-year	3.51	2.98
5-year	4.89	3.83
10-year	6.04	4.77
25-year	7.61	6.92
50-year	8.75	8.33
100-year	10.00	9.79

Bow	vinna	an															Project Number: <u>1</u>	<u>00260-01-001</u>
CONS	ULTI	N G															Project Name: <u>C</u>	<u>arvana</u>
3951 Wes	terre Par	kway															Plans/Stage Opinion Derived: <u>S</u>	<u>ite Plan Submittal #2</u>
Suite 150																	Calculated By: <u>B</u>	<u>. Hammonds</u>
Richmond	, VA 232	33															Date: <u>4</u>	<u>/20/2020</u>
				Carv	vana - Sto	rm Drain	Design C	omputat	tions for a	<u>10</u>							County: ⊻	<u>Vest Hartford, CT</u>
Stru	cture	Drainage Area	Runoff Coeff.	(CA	Tc	1	Q	Invert El	evations	Length	Slope	Diam.	"n" #	Capacity	Velocity	Flow Time	Remarks
From	То	Acres	С	Incr.	Accum.	(mi n.)	(in/hr)	(cfs)	Upper	Lower	(ft)	%	(in)		(cfs)	(fps)	(mi n.)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)	(16)	(17)	(18)
33	32	0.44	0.78	0.34	0.34	5.00	7.44	2.54	49.60	49.14	93.4	0.50	18	0.012	8.05	4.04	0.39	
32	31	0.07	0.90	0.06	0.41	5.00	7.44	3.01	49.04	48.59	89.3	0.50	18	0.012	8.05	4.23	0.35	
31	3	0.00		0.00	0.41	5.00	7.44	3.01	48.59	48.50	58.5	0.15	24	0.012	9.49	2.68	0.36	
6	5	0.18	0.87	0.16	0.16	5.00	7.44	1.16	49.07	48.89	120.0	0.15	24	0.012	9.49	2.05	0.98	
5	4	0.07	0.90	0.06	0.22	5.00	7.44	1.63	48.79	48.71	51.7	0.15	24	0.012	9.49	2.26	0.38	
4	3	0.00		0.00	0.22	5.00	7.44	1.63	48.61	48.50	70.7	0.15	24	0.012	9.49	2.26	0.52	
3	2	0.00		0.00	0.62	5.00	7.44	4.64	48.40	48.37	19.2	0.15	24	0.012	9.49	3.00	0.11	
2	1	0.28	0.84	0.23	0.86	5.00	7.44	6.38	48.27	48.25	15.6	0.13	24	0.012	8.84	3.06	0.08	

	/mal															=	t Number:				
	ULTIN															-	ect Name:				
	sterre Park	kway													Pla	ns/Stage Opinior				#2	
Suite 150																Calci	ulated By:	B. Hamm	onds		
Richmon	d, VA 2323	33															Date	4/20/20	20		
Carvana - Hydraulic Gradeline Computations for a 10 Year Storm Event County: West Hartford, CT																					
Struct.																					
Info.																				H.G.L. @	Тор
Struct.	Outlet																		Final	Struct.	of
Number	W.S.E.	Do	Qo	Lo	Sf	Hf	Vo	Но	Qi	Vi	QiVi	Vi²/2g	Hi	Angle	Ha	H total	1.3Ht	0.5Ht	Н	Inlet	Structure*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(12.5)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
2	50.02	24	6.38	15.61	0.0007	0.01	3.06	0.04	4.64	3.00	13.95	0.14	0.05	19	0.04	0.12	0.16	0.06	0.07	50.09	51.74'
3	50.09	24	4.64	19.17	0.0004	0.01	3.00	0.04	1.63	2.26	3.68	0.08	0.03	50	0.04	0.10	0.13	0.05	0.06	50.15	52.12'
4	50.15	24	1.63	70.66	0.0000	0.00	2.26	0.02	1.63	2.26	3.68	0.08	0.03	49	0.03	0.08	0.11	0.04	0.04	50.19	52.64'
5	50.31	24	1.63	51.73	0.0000	0.00	2.26	0.02	1.16	2.05	2.38	0.07	0.02	11	0.02	0.06	0.08	0.03	0.03	50.34	52.85'
6	50.49	24	1.16	119.96	0.0000	0.00	2.05	0.02							0.00	0.02	n/a	0.01	0.01	50.50	52.61'
31	50.09	24	3.01	58.48	0.0002	0.01	2.68	0.03	3.01	4.23	12.73	0.28	0.10	91	0.19	0.32	0.41	0.16	0.17	50.26	52.58'
32	50.26	18	3.01	89.27	0.0007	0.06	4.23	0.07	2.54	4.04	10.27	0.25	0.09	0	0.06	0.22	0.29	0.11	0.17	50.43	53.13'
33	50.43	18	2.54	93.41	0.0005	0.05	4.04	0.06							0.00	0.06	#N/A	0.03	0.08	50.51	52.46'

Bowman		Drainat Nama, Campana - Mast Hamberd (
		Project Name: <u>Carvana - West Hartford, (</u> Project Number: <u>100260-01-00</u>
CONSULTING		•
3951 Westerre Parkway		Plans/Stage Opinion Derived: Site Plan Submittal
Suite 150		Calculated By: <u>B. Hammon</u>
Richmond, VA 23233		Date: <u>4/21/202</u>
V	Water Quality C	Calculations & Summary
		Notes
Site Conditions		
Pre-Dev Site Area (Ac.)	1.27	
Impervious Area (Ac.)	0.89	
Impervious %	70.07%	WQV = (1")(R)(A)/12, where:
Post-dev Site Area (Ac.)	1.27	R = Volumetric Runoff Coefficient = 0.005 + 0.009*(I)
Impervious Area (Ac.)	0.91	I = percent impervious cover
Impervious %	71.65%	A = site area (acres)
Water Quality Volume Requirements	(per Chapter 7 of C	T Stormwater Manual)
Water Quality Volume (WQV) (ac-ft)	0.074	WQV = (1)*((.005+.009)(71.65))*(1.27) / 12
Water Quality Volume (WQV) (cu ft)	3210	Per Town Comment, full WQV must be treated
Water Quality Flow Requirements (pe	r Appendix B of CT	Stormwater Manual)
Water Quality Flow (WQF) (cfs)		WQF = (qu)(A)(Q)
Curve Number (CN)	93	HydroCAD Calculation
Time of Concentration (Tc, hours)	0.167	Minimum 10 mins
Initial Abstraction (Ia)	0.151	Table 4-1 of TR-55
Unit Peak Discharge (qu, csm/in)	550	Exhibit 4-III of TR-55
Runoff Depth (Q, watershed inches)	0.695	[WQV (ac-ft) x 12 (in/ft)] / DA (acres)
Drainage area (A, sq. miles)	0.002	Area (ac) / 640 (ac/sq mi)
Water Quality Flow (WQF) (cfs)	0.76	WQF = (550)(0.001984375)(0.69485)

SPECIAL FLOOD HAZARD AREA DOCUMENTATION:



Bowma	an -	Proje	ct Number:	100260-01-0	01						
CONSULTI	N G	Pro	oject Name:	61 Kane St, \	West Hartfor	d, CT					
3951 Westerre Pai	kway	Ca	Calculated By: B Hammonds								
Suite 150			Date: 4/17/2020								
Richmond, VA 232	33										
INCREMENTAL STORAGE ANALYSIS TABLE											
Pre-Development Post-Development											
Stage Flouration	Area	Volume	Volume	Area	Volume	Volume					
Stage Elevation	(Sq. Ft.)	(Cu. Ft)	(Cu. Yd)	(Sq. Ft.)	(Cu. Ft)	(Cu. Yd)					
47' Contour	0.00			0.00							
48' Contour	71.53	35.77	1.32	118.29	59.15	2.19					
49' Contour	705.26	388.39	14.38	875.44	496.86	18.40					
50' Contour	1564.03	1134.64	42.02	1893.00	1384.22	51.27					
51' Contour	2618.55	2091.29	77.46	2920.10	2406.55	89.13					
52' Contour	3873.55	3246.05	120.22	3929.75	3424.93	126.85					
53' Contour	5362.39	4617.97	171.04	6066.00	4997.88	185.11					
53'+ Contour	6654.34	6008.36	222.53	6654.34	6360.17	235.56					
	Cu	m. Volume:	648.98	Cu	m. Volume:	708.51					

Cut/Fill Report

2020-04-16 14:27:09 **Generated:**

bhammonds

C:\Users\bhammonds\Desktop\Engineering Plans\C:\Users\bhammonds\Desktop\Engineering Plans\+100260-01-001 **Drawing:**

GBASE.dwg

	Volume Summa	ry						
	Name	Туре	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (KClı)	Fill (Cu. Yd.)	Net (Cu. Yd.)
	CUTFILL - SITE	full	1.000	1.000	45958.64	876.76	329.30	547.45 <cut></cut>
CUT/FILL CALCULATION———	FLOODPLAIN BOUNDARY	bounded	1.000	1.000	6150.88	188.72	120.25	68.47 <cut></cut>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	52109.52	1065.48	449.55	615.92 <cut></cut>

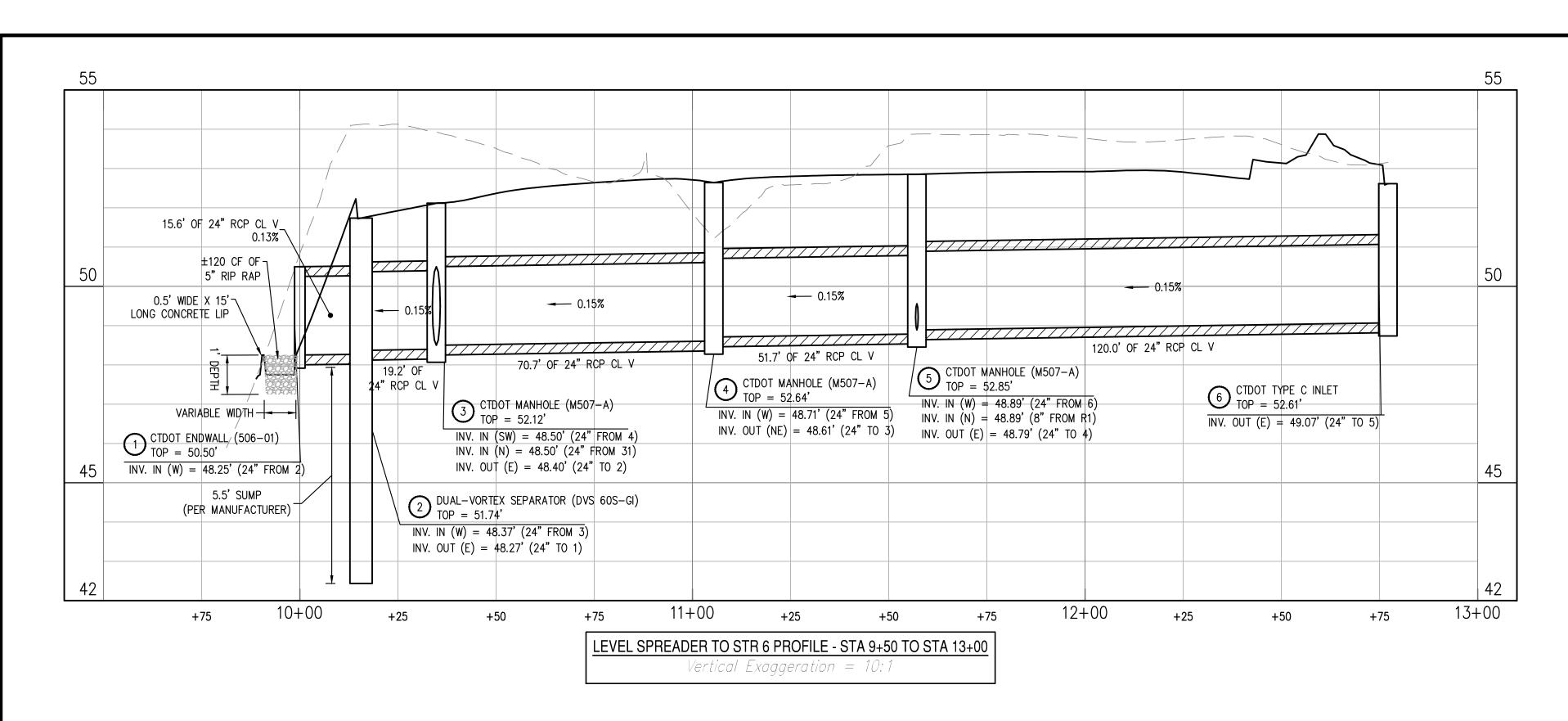
* Value adjusted by cut or fill factor other than 1.0

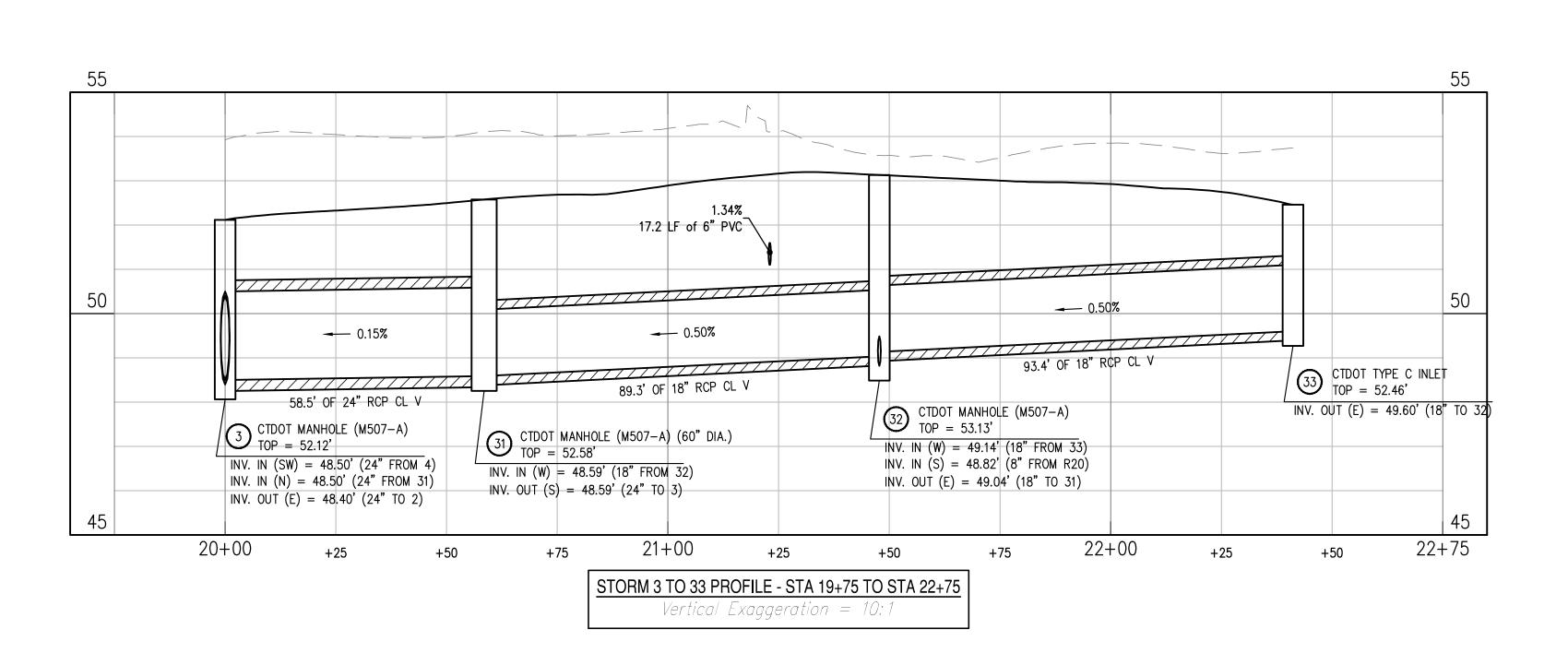
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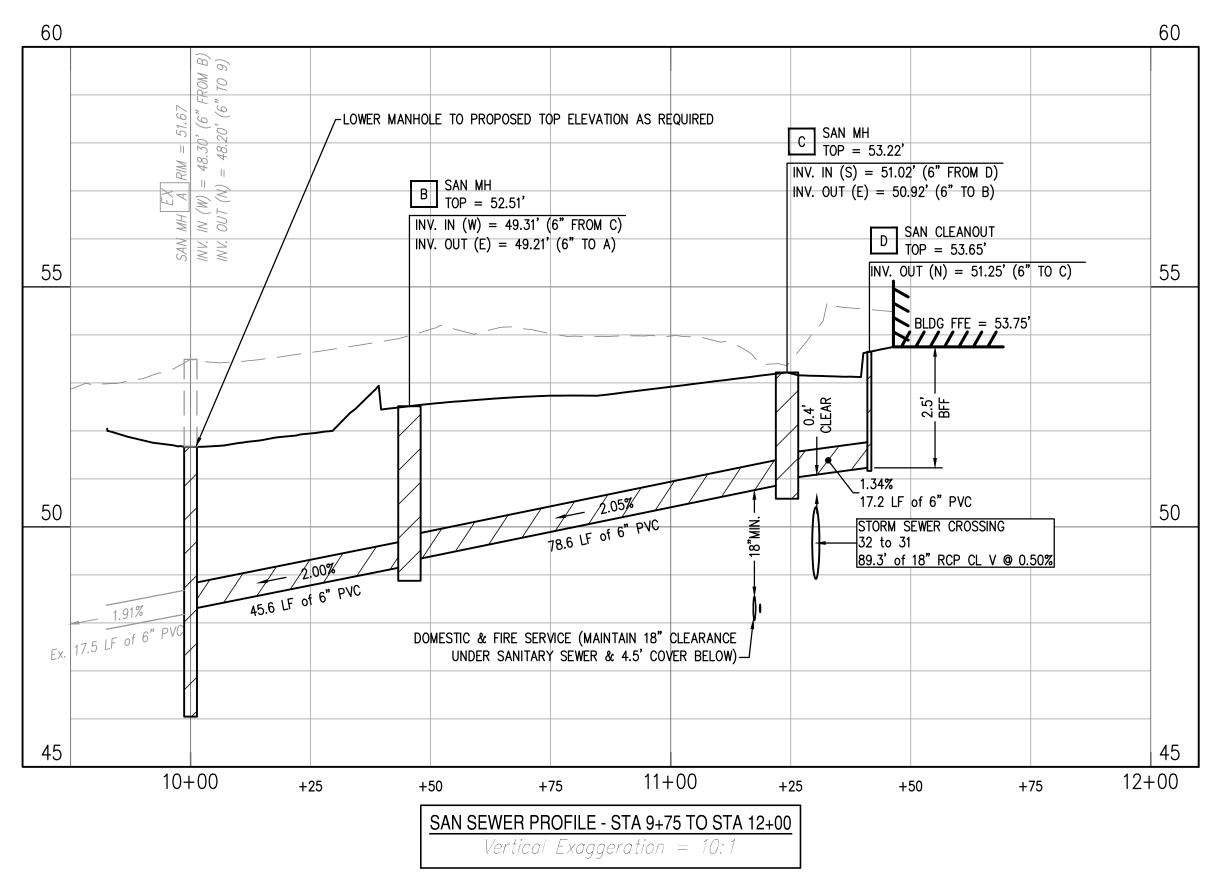
ER CENTI COMPLIANCE ISTOMEF, SFHA, & SFHA ∞ ENT A - PROPOSEI I SET FOR SITE F STORMWATER MANAGEN **ARVANA**

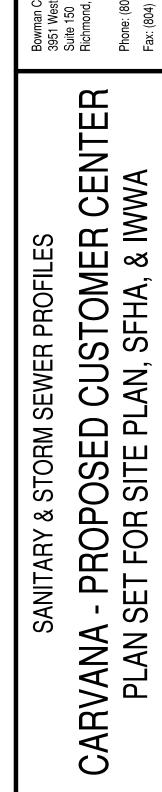
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BCG BCG BH
DESIGN DRAWN CHKD JOB No. 100260-01-001 DATE: 04-22-2020 SHEET C6.2







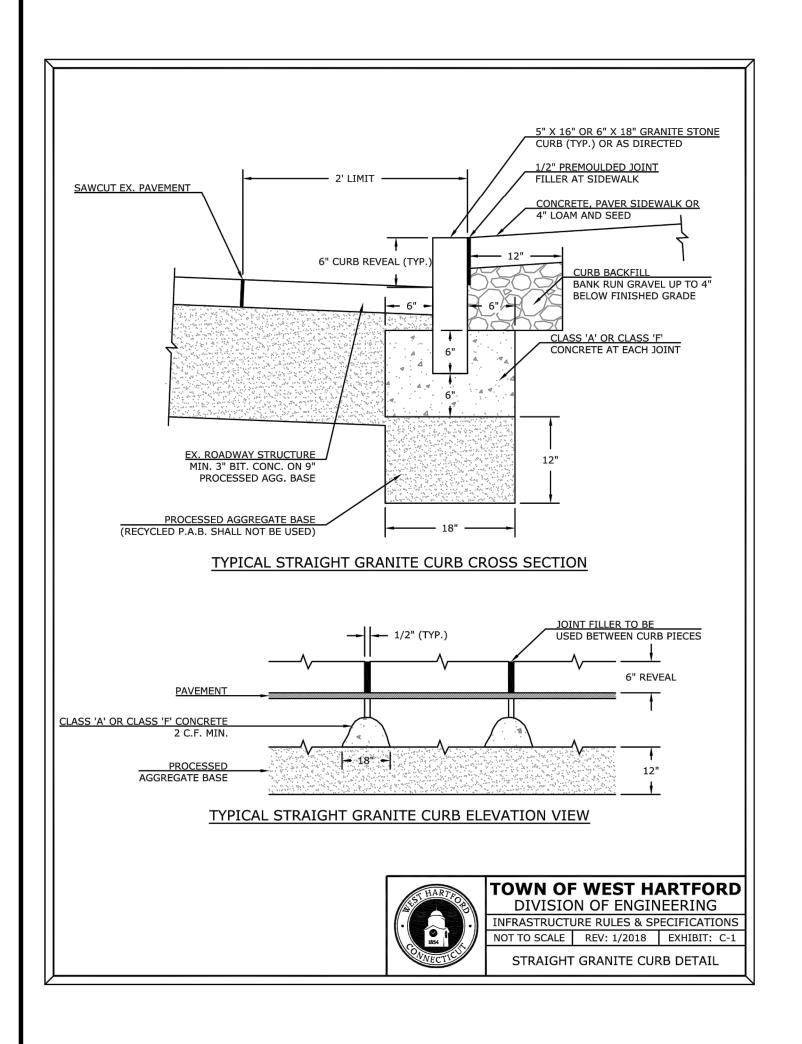


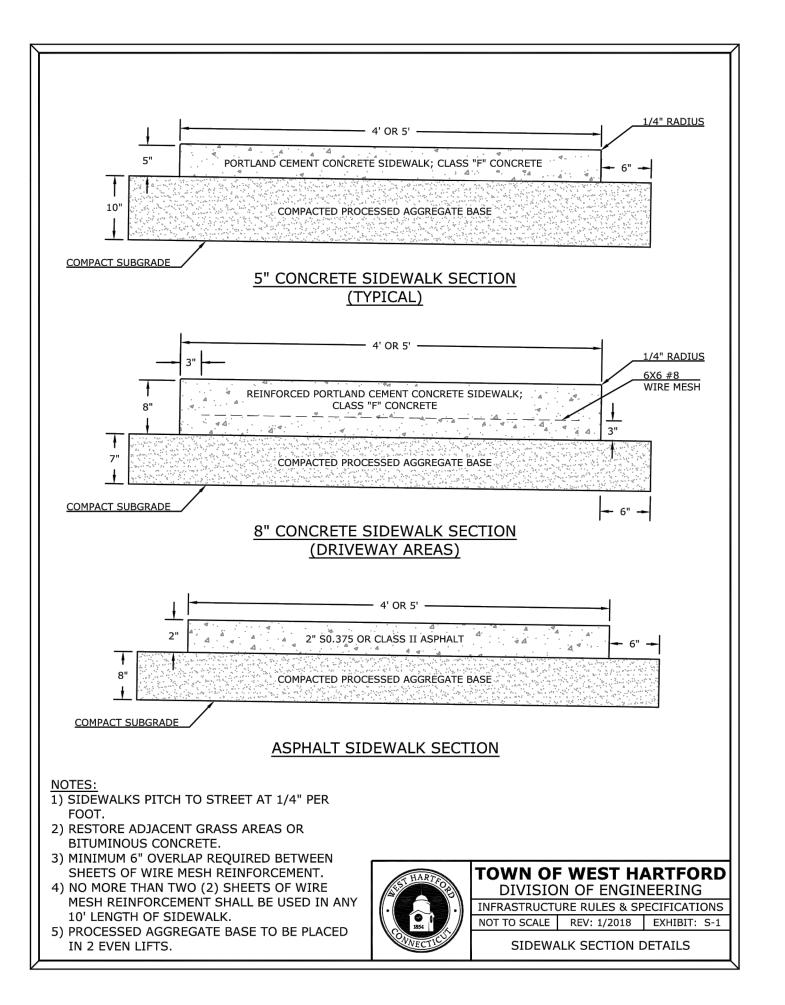
BCG BCG BH
DESIGN DRAWN CHKD

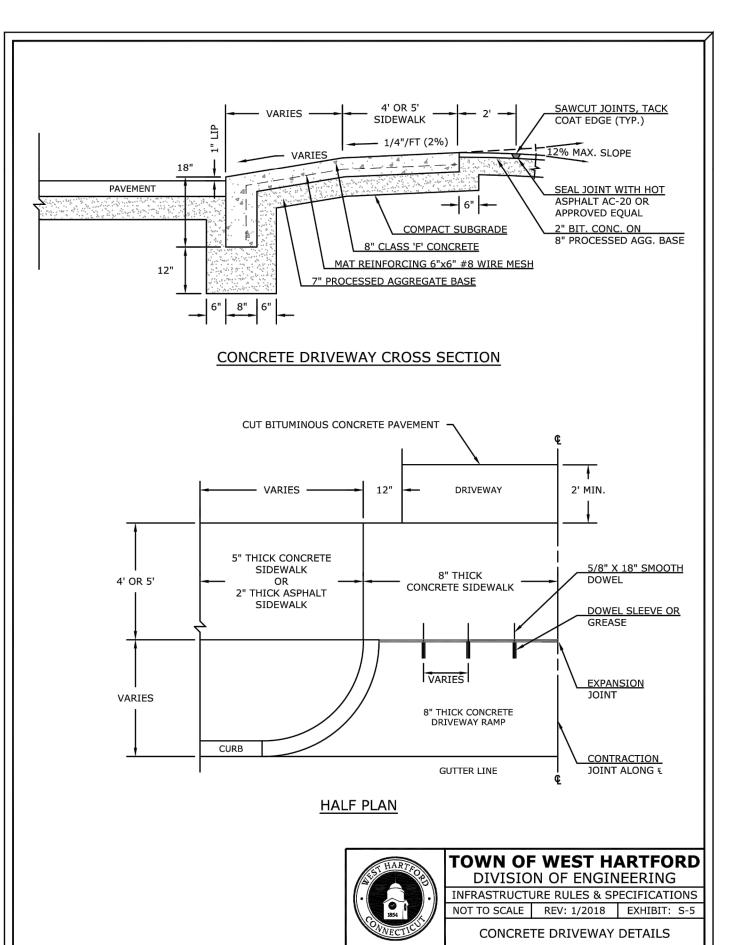
JOB No. 100260-01-001

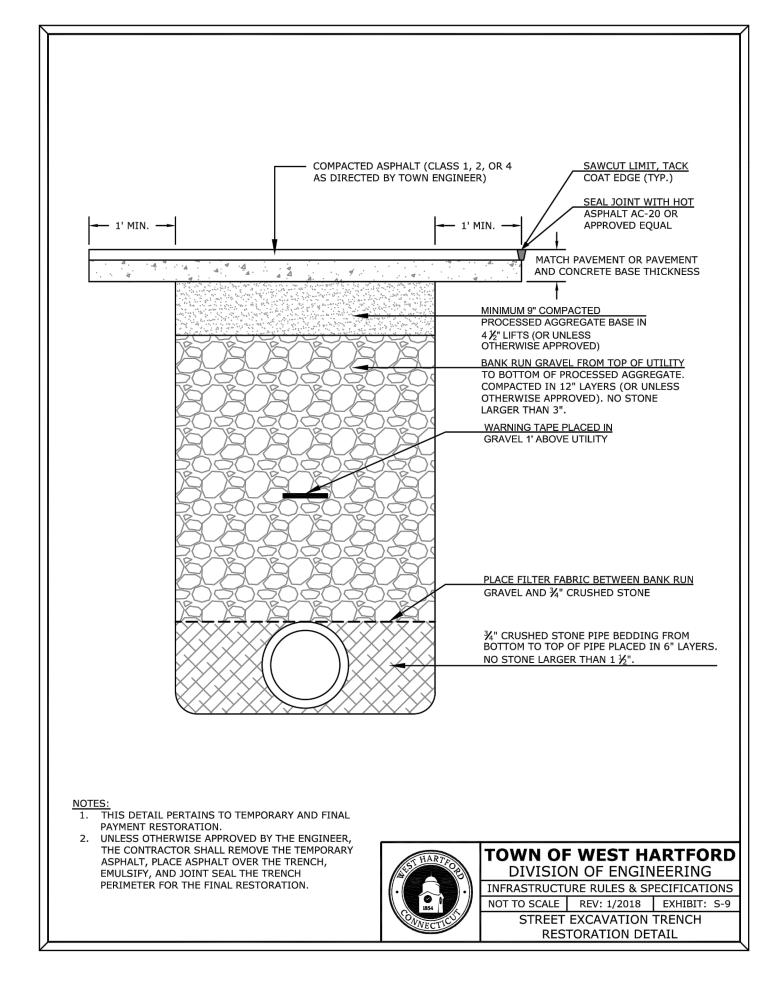
DATE: 04-22-2020

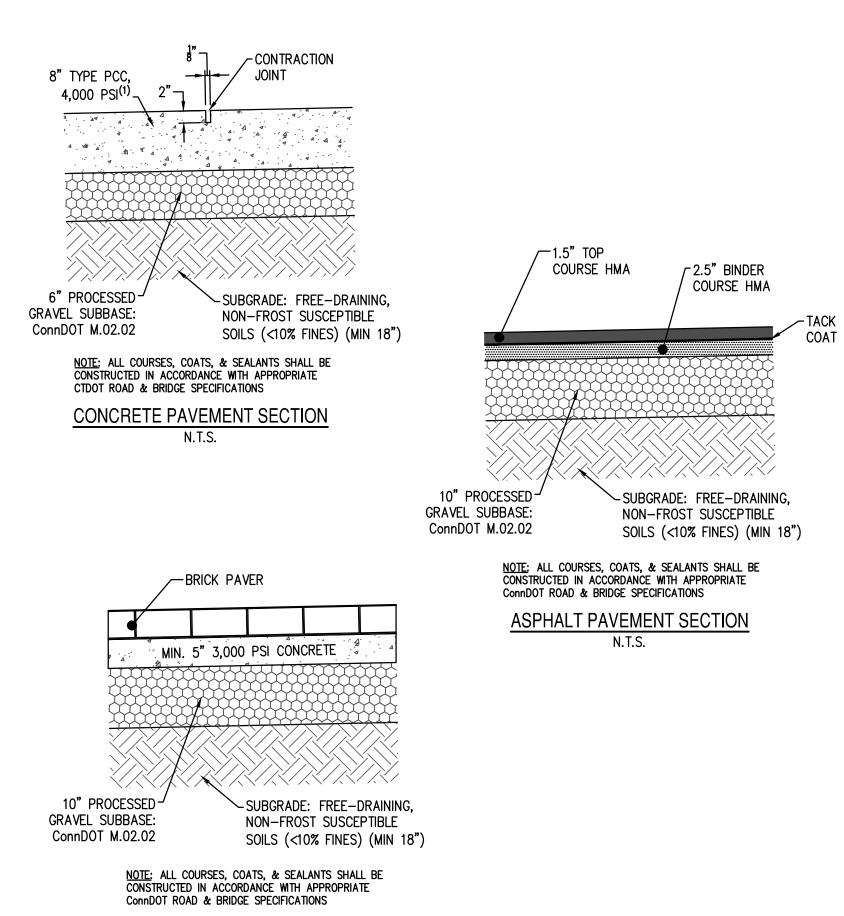
SHEET C7.0

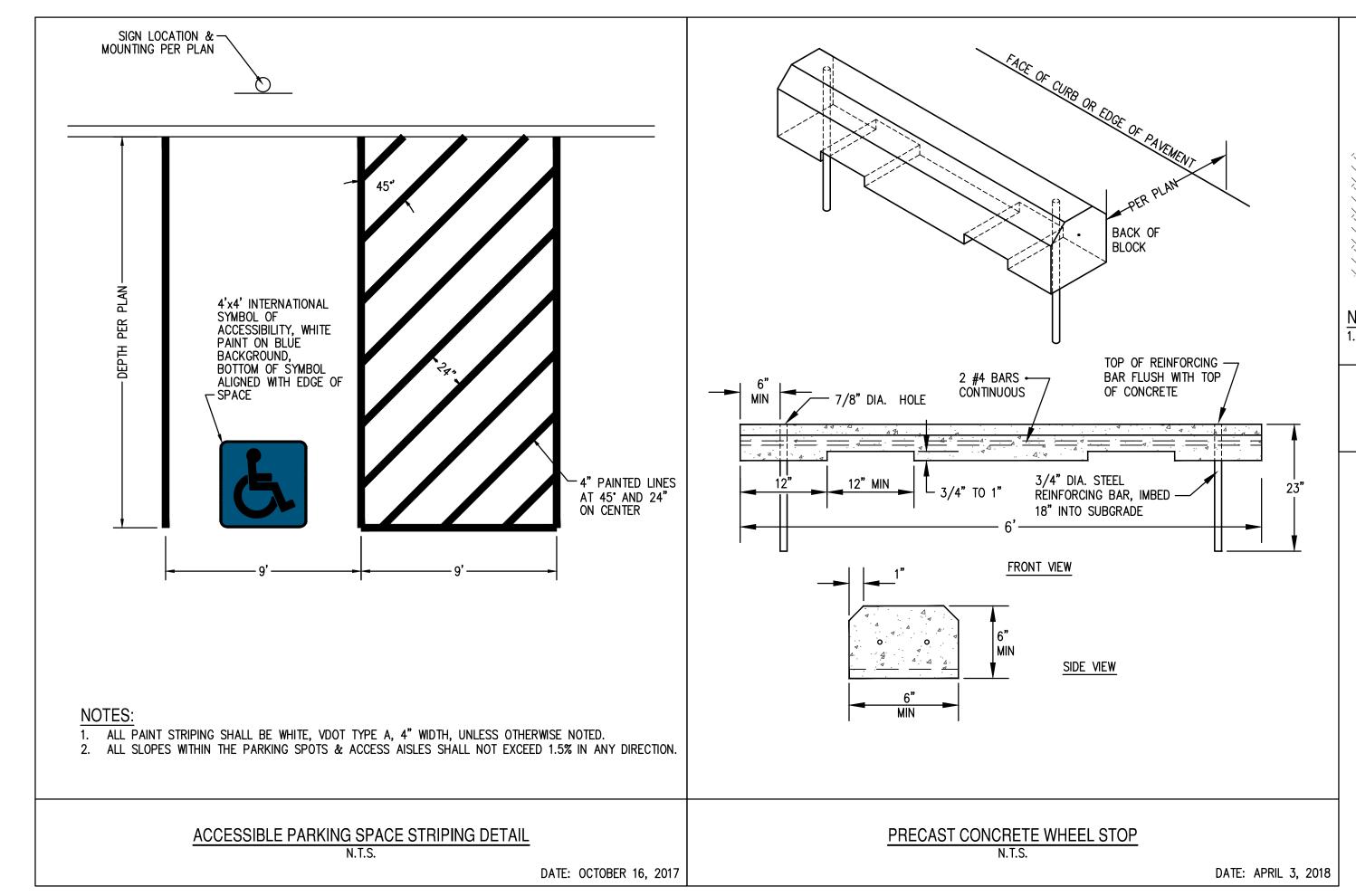


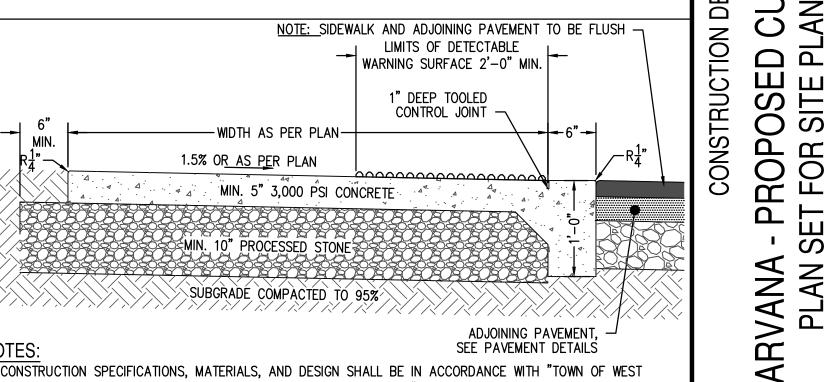








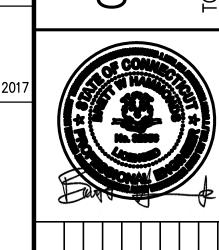




. CONSTRUCTION SPECIFICATIONS, MATERIALS, AND DESIGN SHALL BE IN ACCORDANCE WITH "TOWN OF WEST HARTFORD SECTION B-1 TECHNICAL SPECIFICATIONS FOR SIDEWALKS"

FLUSH SIDEWALK/TURNDOWN CURB

DATE: NOVEMBER 20, 201



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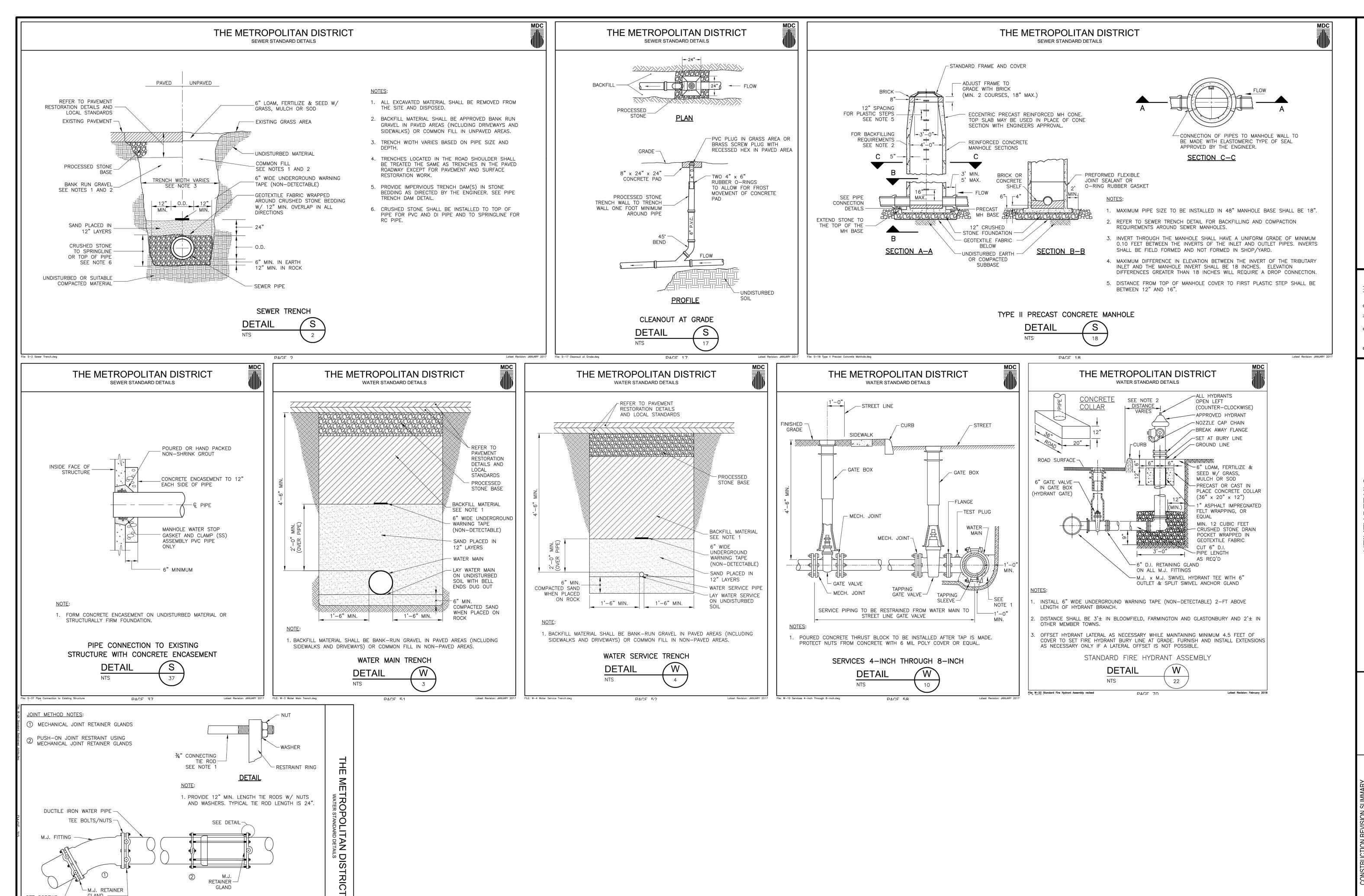
BCG BCG DESIGN DRAWN CHKD JOB No. 100260-01-001 DATE: 04-22-2020

SHEET C8.0

GRAPHIC SCALE

BRICK PAVER SECTION

N.T.S.



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VANA \Box

BCG BCG DESIGN | DRAWN | CHKD JOB No. 100260-01-001 DATE: 04-22-2020 SHEET C8.1

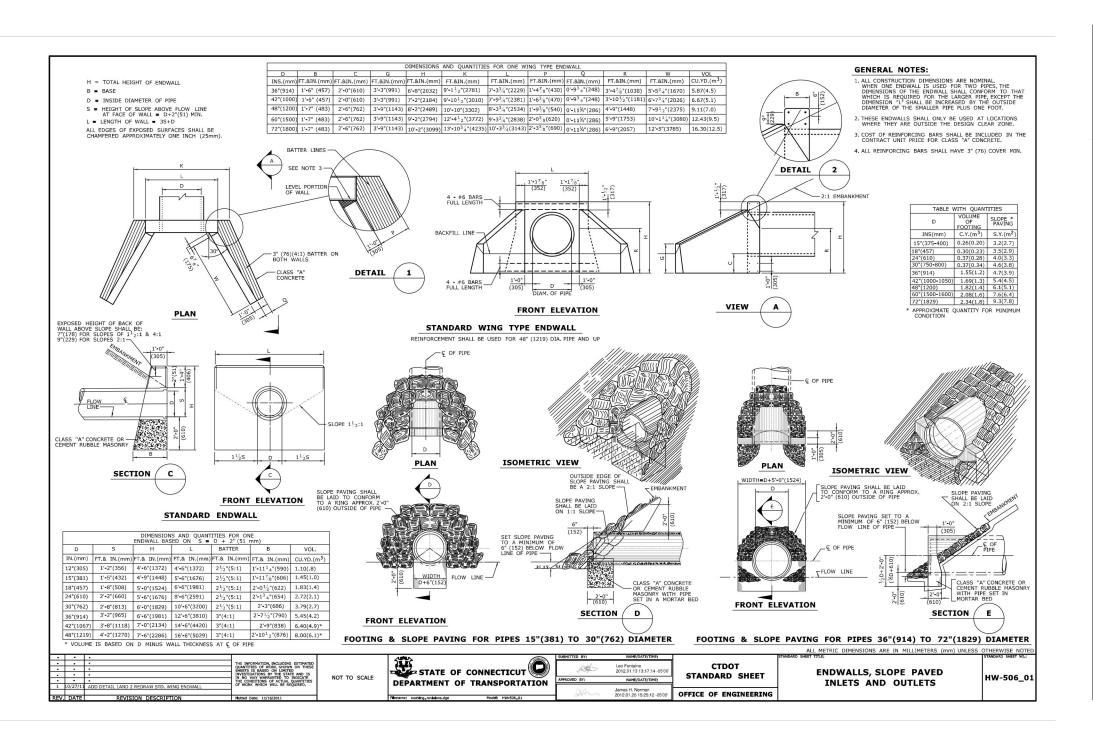
DETAIL

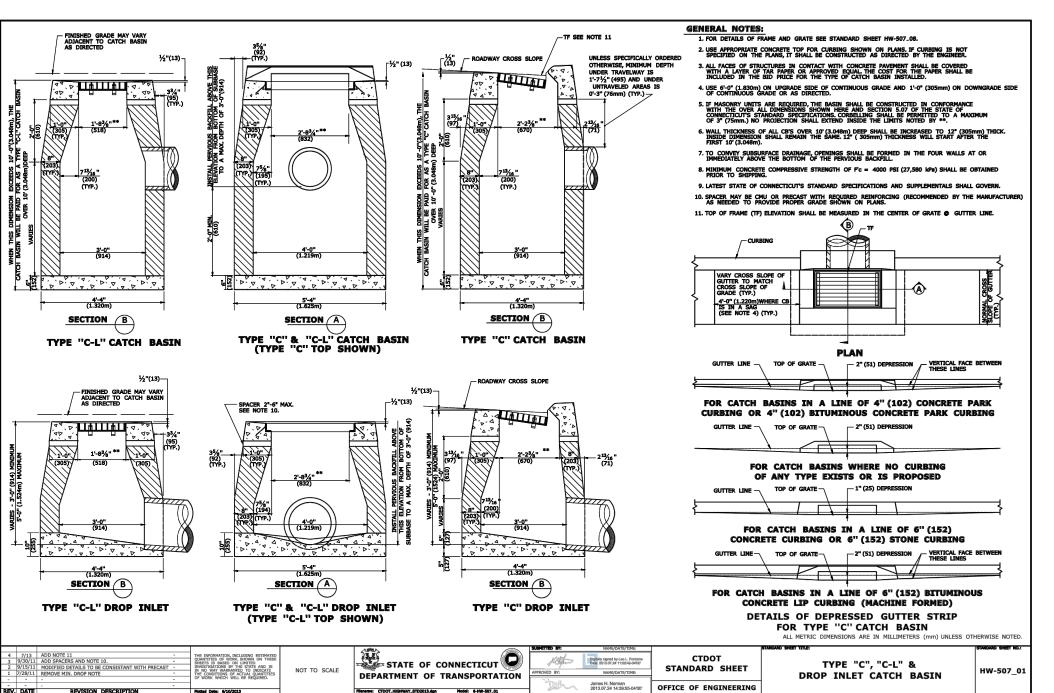
STANDARD RESTRAINED JOINTS

-M.J. RETAINER GLAND ----

SET SCREWS -(TYP.)

RETAINER — GLAND





•Internal components are broken or missing.

to affect the performance of the system.

•Confned space entry equipment, if needed

Manhole hook or pry bar

Tape measure

Sorbent pads

Vacuum truck

chambers around the vortex tubes is significant.

•Tethered sorbent pads, if used, are dirty or saturated.

•Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)

•Traffc control equipment (cones, barricades, signage, fagging, etc.)

the vortex tube opposite the tube used for vacuum hose access.

with water when the next storm event occurs.

removed from sumped catch basins or manholes.

•The accumulation of foating trash and debris that cannot be retrieved with a net and/or oil in the baffed

•The sediment level in the sediment storage sump is greater than 12 inches. The capacity of the sediment

sump is 18 inches of sediment depth for all DVS models. Sediment depths greater than 18 inches will begin

•Remove floating trash, debris and oils from the water surface using an extension on the end of the boom

hose of the vacuum truck. Continue using the vacuum truck to completely dewater the structure through

the vortex tubes and evacuate all accumulated sediment from the sediment sump. Some jetting may be

required to fully evacuate sediment from the sump. This is easily achieved by inserting a jet hose through

•The structure does not need to be refilled with water after maintenance is complete. The system will fill

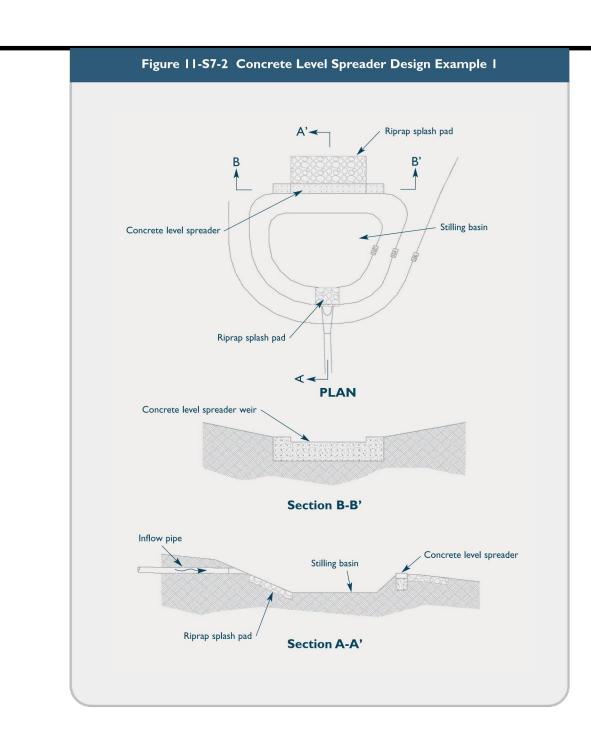
•All material removed from the DVS during maintenance must be disposed of in accordance with local

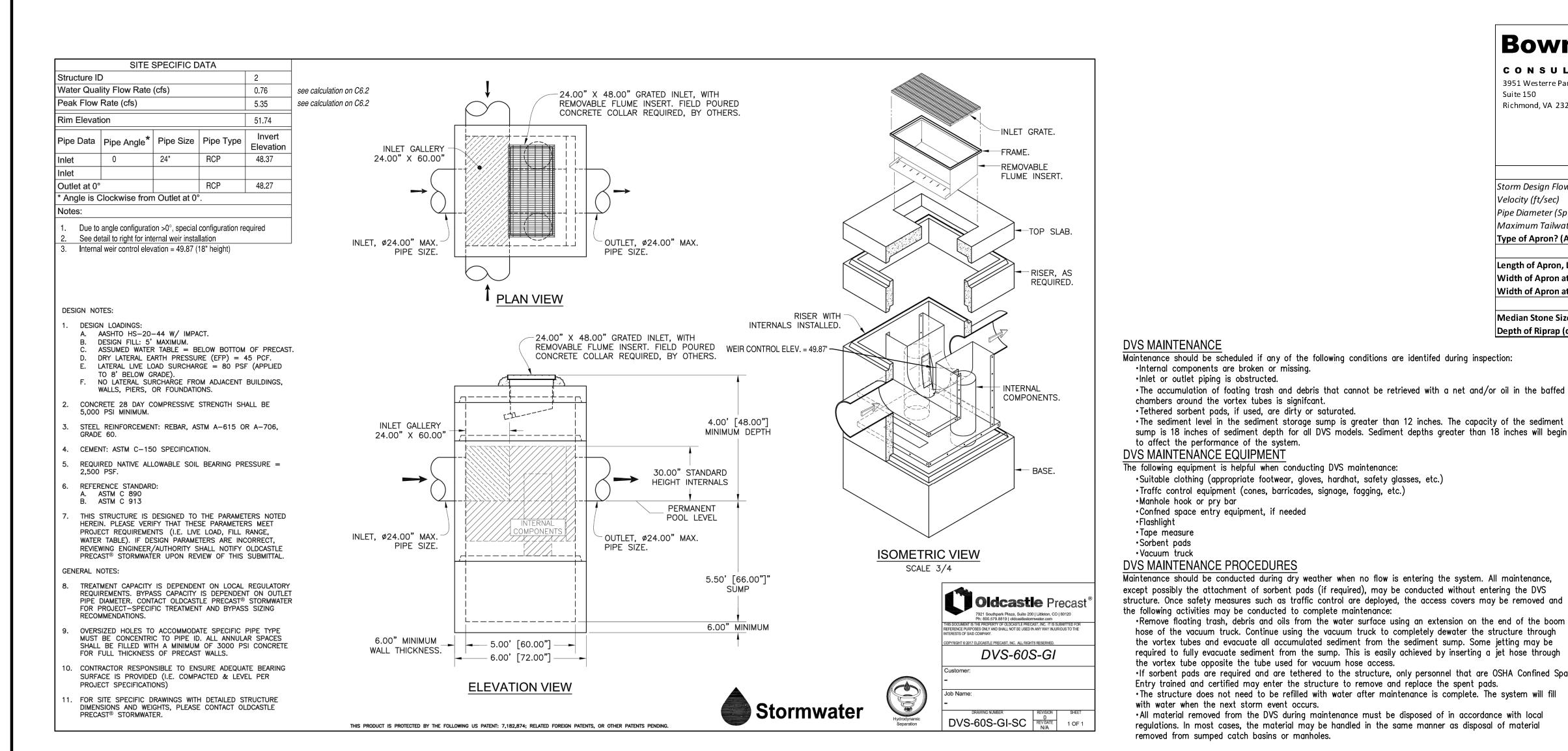
regulations. In most cases, the material may be handled in the same manner as disposal of material

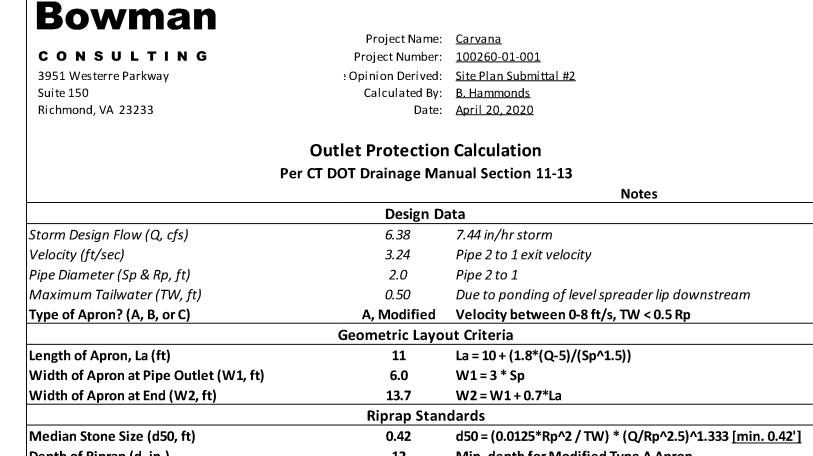
Entry trained and certified may enter the structure to remove and replace the spent pads.

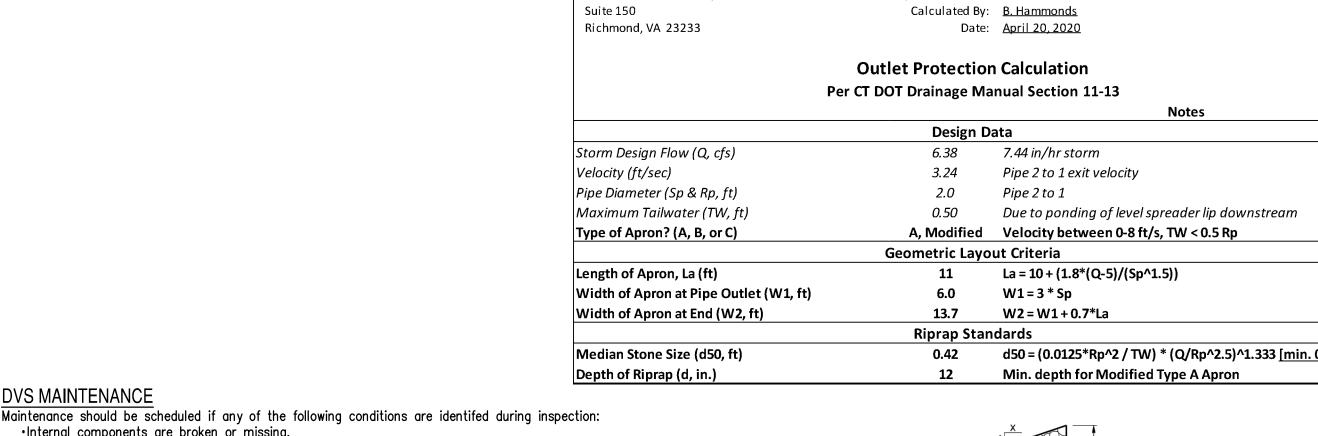
•If sorbent pads are required and are tethered to the structure, only personnel that are OSHA Confined Space

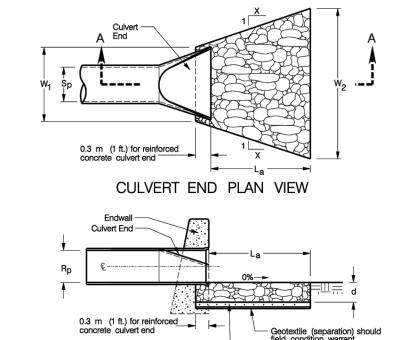
•Inlet or outlet piping is obstructed.







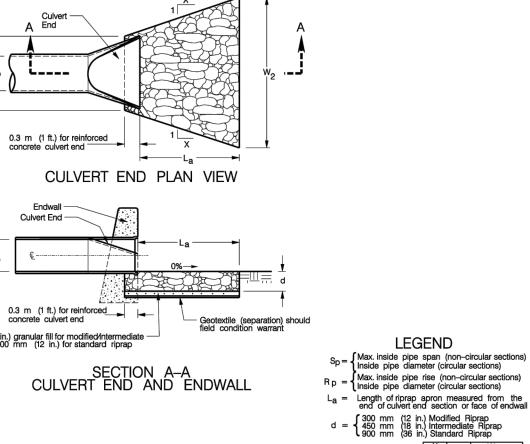




150 mm (6 in.) granular fill for modified/intermediate - riprap and 300 mm (12 in.) for standard riprap

R p = { Max. inside pipe rise (non-circular sections) Inside pipe diameter (circular sections) La = Length of riprap apron measured from the end of culvert end section or face of endwall d = $\begin{cases} 300 \text{ mm} & \text{(12 in.) Modified Riprap} \\ 450 \text{ mm} & \text{(18 in.) Intermediate Riprap} \\ 900 \text{ mm} & \text{(36 in.) Standard Riprap} \end{cases}$

Figure 11-13 Type A and B Riprap Apron

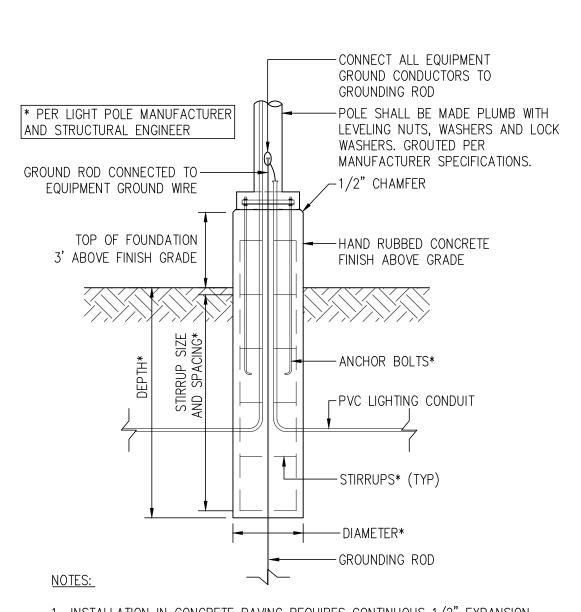


(to be used where there is no defined channel downstream of the outlet)

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DRAINAGI SEI ITE O S OP(\square <u>_</u> S ARVANA PLAN

SHEET C8.2



- 1. INSTALLATION IN CONCRETE PAVING REQUIRES CONTINUOUS 1/2" EXPANSION JOINT MATERIAL ALL AROUND. SEAL WITH JOINT SEALER PER SPECIFICATIONS
- 2. VERTICAL REINFORCING BARS PLACED ADJACENT TO ANCHOR BOLTS PER LIGHT POLE MANUFACTURER AND STRUCTURAL ENGINEER.

SITE LIGHT POLE BASE DETAIL

SITE LIGHTING MATERIALS LEGEND:

PRIOR TO BEGINNING CONSTRUCTION.

COMPLETE AND OPERATIONAL SYSTEM.

SYSTEM OVER TO OWNER.

GENERAL PHOTOMETRIC NOTES:

ENGINEER AND OWNER PRIOR TO ORDERING ANY LIGHTING MATERIALS.

PLACING UNDERGROUND ELECTRICAL CONDUIT UNDER TREE(S) DRIP LINES.

SPECIFIC DETAILS AND DIMENSIONS AS TO LIGHT POLE(S), POLE MOUNTING AND POLE BASE

PRIOR TO INSTALLING, VERIFY WITH LANDSCAPE PLANS AND ROUTE AS NECESSARY TO AVOID

8. CLEAN ALL FIXTURES OF DEBRIS (INCLUDING THE INTERIOR OF REFLECTORS) BEFORE TURNING

ILLUMINATION LEVELS HAVE BEEN CALCULATED FROM LABORATORY DATA TAKEN UNDER

CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN

ACCORDANCE WITH THE ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS.

CONTRACTOR SHALL PROVIDE ALL LIGHT FIXTURES, POLES AND ACCESSORIES NECESSARY FOR A

ACTUAL ILLUMINATION LEVELS MAY VARY FROM THE PREDICTED RESULTS SHOWN ON THIS PLAN

BUILDING LIGHTING HAS NOT BEEN TAKEN IN TO ACCOUNT OR MODELED HEREIN AND MAY

DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER FIELD CONDITIONS.

APPROVAL BEFORE APPLYING FOR ELECTRICAL PERMIT.

SITE LIGHTING NOTES:

ELECTRICAL PLAN:

DETAIL(S).

DATE: OCTOBER 9,

CONTRACTOR SHALL FIELD VERIFY AND COORDINATE EXACT LOCATION OF CONDUIT PENETRATIONS INTO BUILDING. PROPOSED SCHEDULE 80 PVC ELECTRICAL CONDUIT, SIZE PER ELECTRICAL PLAN. CONTACT LOCAL "811" UTILITY LOCATOR AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION. REFER TO THE LATEST ELECTRIC UTILITY COMPANY ELECTRIC SERVICE SPECIFICATIONS MANUAL CATALOG NUMBERS, COLORS AND FINISHES CONTAINED HEREIN SHALL BE VERIFIED WITH ARCHITECT, 4.1. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING FULL ELECTRICAL CIRCUITRY, WIRING AND CONDUIT PLAN AND SHALL SUBMIT THE SAME TO ARCHITECT, ENGINEER AND OWNER FOR 4.2. SEE ELECTRICAL PLAN FOR FULL DETAILS OF ELECTRICAL CIRCUITRY, WIRING AND CONDUIT PLAN. 5. STRUCTURAL ENGINEER OF RECORD AND/OR LIGHTING POLE MANUFACTURER TO PROVIDE SITE

Luminaire Schedule

Qty

Label

	2 EX 6 EM 6 WP 8 BL	SINGLE SINGLE SINGLE SINGLE SINGLE SINGLE SINGLE SINGLE SINGLE	N.A. 2827.3 N.A. N.A. N.A.	0.750 EXISTING LIGHT - MODE 0.900 EMERGENCY EXTERIOR 0.900 WALL PACK - 12' MH 0.900 BOLLARD - 3.5' MH 0.900 20' MOUNTING HEIGHT, 0.900 20' MOUNTING HEIGHT, 0.900 20' MOUNTING HEIGHT, 0.900 12' MOUNTING HEIGHT,	6' ARM, AND 0 D TILT 6' ARM, AND 0 D TILT				C783F
Label	ation Summary Ca	alcType Units lluminance Fc lluminance Fc		in Avg/Min Max/Min .0 N.A. N.A.	·				
						To the second se	FLD		
		s 72°10'	15 <u>"</u> W			FLD			
EXI AT	AND A LLF OF 0.75	0.8 1.2 0.8 0.5 0.4 1.8 1.5 0.9 0.50.4		N/F ALLIANCE ENERGY CORP #55 KANE ST ZONED: IR					
9, 2017	0.5 0.6 0.7 0.5	1.7 1.3 0.8 0.50.3 1.1 0.9 0.6 0.3.3 0.6 0.5 0.4 0.2 0.4 0.3 0.2			B ⁰ 1	0.0 0.1 0.1 0.1 0.1	315.55' 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		
	0.2 0.1 0.1 0.1	0.2 0.2 0.1 0.1.1 0.1 0.1 0.1 0.1.1 0.1 0.1 0.2 0033	0.0	0.0 0.0 0.1	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.2 0.3 0.6 0.8 0.1 0.2 0.5 1.0 1.8 0.2 0.2 0.6 1.3 3.0		0 0	
	N/F RN HOLDINGS LLC 10.0 10.1 10.1 10.1 10.5 10.1 10.	0.9 1.3 1.1 0.5 0.4 SA	0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.3 0.3 0.3 0.3 0.3 0.4 0.5 0.7 0.6 0.7 0.6 0.7	ASPHALT	.6 1.1 0.3 0.4 0.3 16 .6 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.3 0.2 0.4 1.3 3.7 0.2 0 f STOR f BUILDING 0 2.5 FF = f 54.2' f 45.905 f 57 0.7 1.5	8.0 8.3 1.6 0.4 0.1 5.8 6.6 1.1 0.1 0.1 0 0.0 0 0 0 0 0		
	0.1 0.1 0.1	1.4 1.6 1.1 0.8 1.1 2.0 1.1 1.1 0.8 0.9 1.5 2.6 8 0.7 0.7 0.6 1.0 1.7 2 7		0.8 6.8 2.8 0	.1 0.1 0.0 B-3 . T 1. .1 0.PROPOSED 0 0.1 CUSTOMER CENTER .2 0±5,800 SP : FOOTPRINT 0.1 0.2 FFE = 53.75 C	11.4 2.7 0 5 0.4 0.9 10.9 .0 0.7 0.3 0.5 2.1 3.0 0.5 0.20 0.2 0.3 0.9 0.3 0.1 0.1	0.6 0.3 0.1 0.0	L=288.67' R=165.00' ——D=10074'23" B=N 36'06'39" E C=253.24'	
	0.1 0.7 0.1 0.8 0.0 0.1 0.8 0.8 0.1 0.	0.8 BITUMINOUS 0.8 1.2 1.9 2 2.2 2.4 0.9 1.1 1.7 2.1 ASPHALT CURBING 6.0 9.5 4.3 1.3 1.4 1.5	2.8 2.6 2.2 2.1 1.9 1.1 SA-2 2.8 4.4 5.6 5.0 3.0 1.8 3.6 9.3 15.3 12.2 5.0 SA-3 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.	2.0 0.7 0.4 1.15 5.3 7	0.1 0.1 0.2 B-4 0.5 0.3 0.6 0.3 3 3 6 RAMP 2.2 0.5 0.5 0.1 0.2 6.0 1.2	4.1 2.3 0.4 0.1 0.1 1.0 0.5 0.2 1 0.0 0.2 1 0.0			
	0.0 0.0 0.0 0.0 0.0 0.0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.3 0.4 0.8 1.1 1.0 0.5			0.0			
	0.0 0.d	A=37.16' R=4725.00' D=0°27'02" B=S 86°27'53" W C=37.16'	FEMA LINE PER FIRM 09003C0364F, EFFECTIVE 9-26-2008	ZONE X FLO ZONE A					
								0 20' GRAPHIC SCA	40'

D CUSTOMER CENTE PLAN, SFHA, & IWWA

PROPOSEI ET FOR SITE F

ARVANA PLAN S

BCG BCG

DESIGN DRAWN CHKD

JOB No. 100260-01-001

DATE: 04-22-2020

SHEET C9.0

GRAPHIC SCALE
1"=20'

SET

SITE LIGHT

0.750 EXISTING LIGHT - MODELED AT 20' MH AND 45 D TILT

Total Lamp Lumens LLF Description

Arrangement

SINGLE



Ш \vdash . EN Ш≪ TOMI SFHA, 8 S DET, \circ LIGHTII Шш S E 0 S Д К SITE S G **_**

AR

S

S VANA PLAN

BCG

RSX1 LED RSX1 LED-P4-50K-R2-MVOLT-SPA-EGFV RSX1 LED-P4-50K-R5-MVOLT-SPA-EGFV Area Luminaire Area Luminaire NGHTIME OF CURS US DE COMMENTANT DE COMMENTA

> Introduction The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an **Specifications** affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID 0.57 ft² (0.05 m²) (ft²@0°): luminaires. 21.8" (55.4 cm) Length:

> > —— L ——--

30K 3000K **R2** Type 2 Wide

Type 3 Wide

13.3" (33.8 cm)

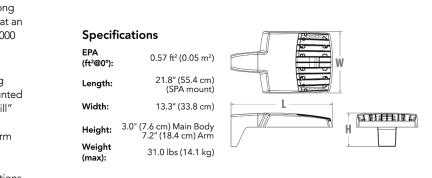
31.0 lbs (14.1 kg)

Height: 3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" FA HIALIBLE solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

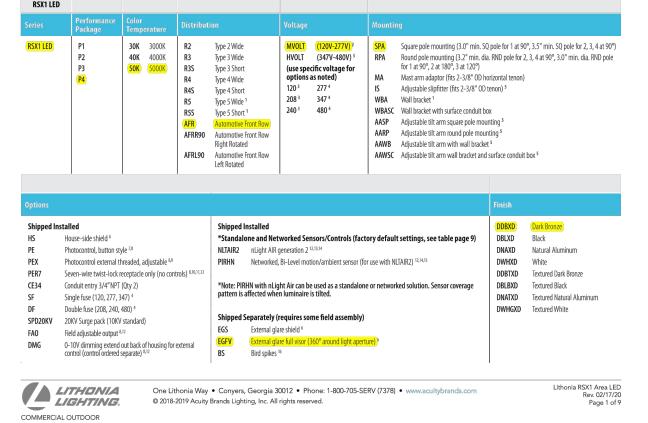
Span Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°)

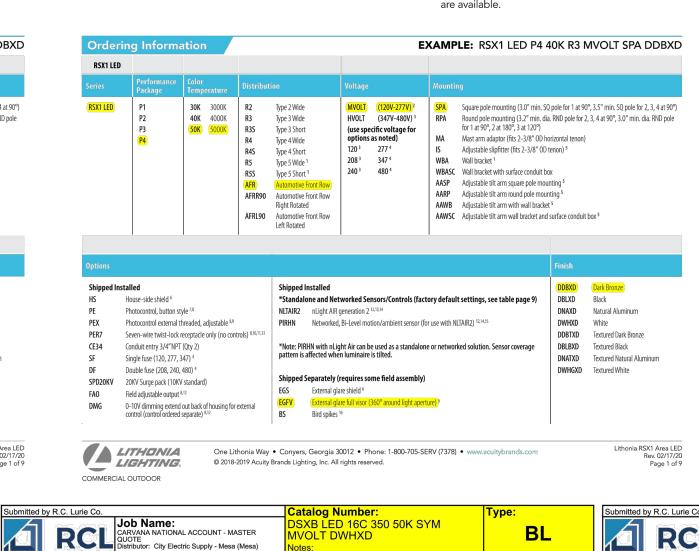


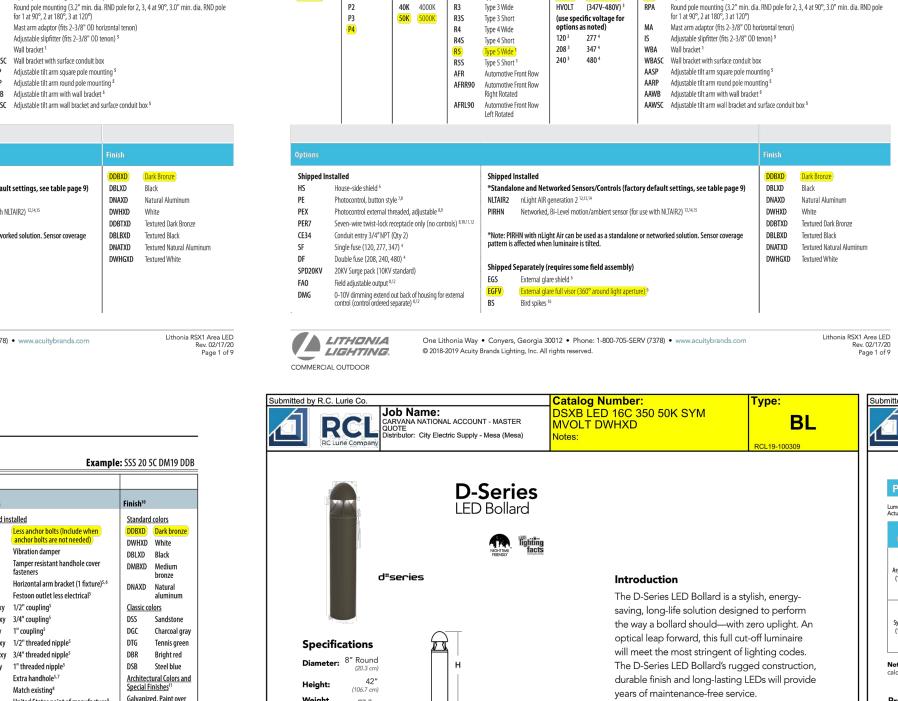
Introduction The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires. The RSX features an integral universal mounting

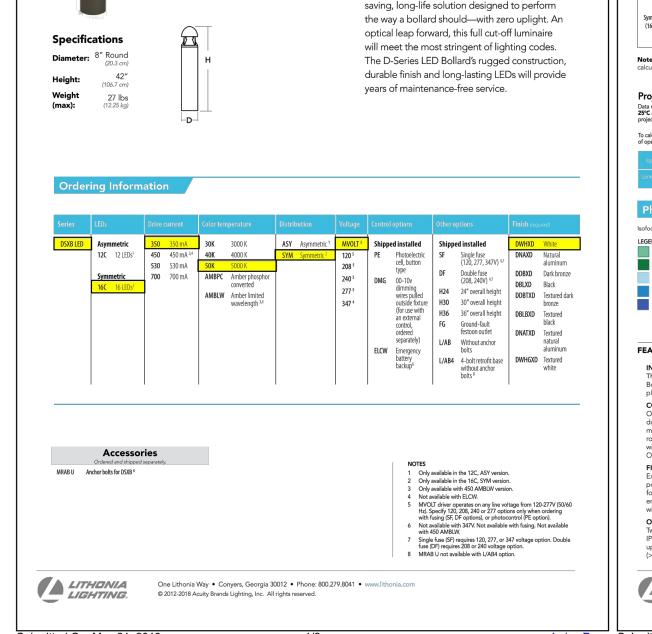
Number RSX1 LED-P4-50K-AFR-MVOLT-SPA-EGFV

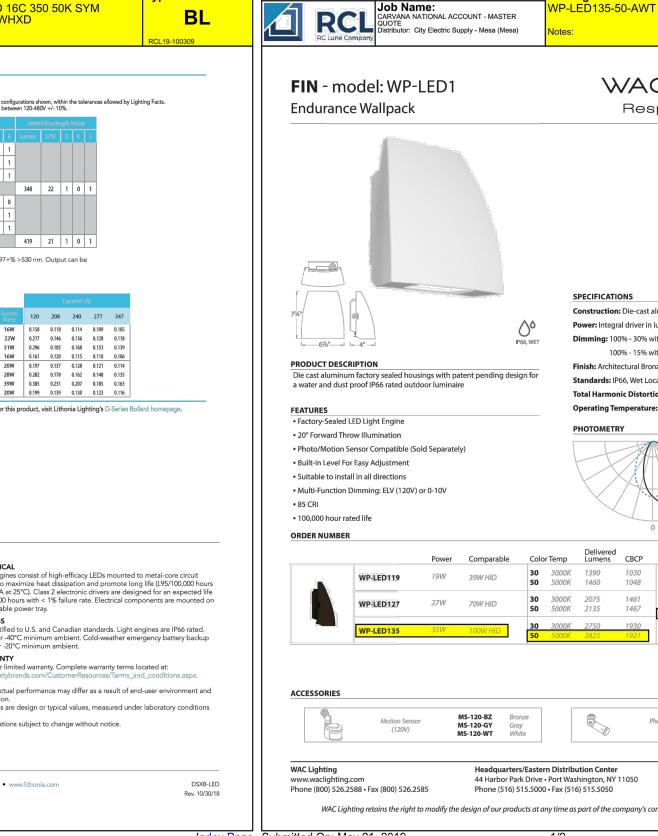
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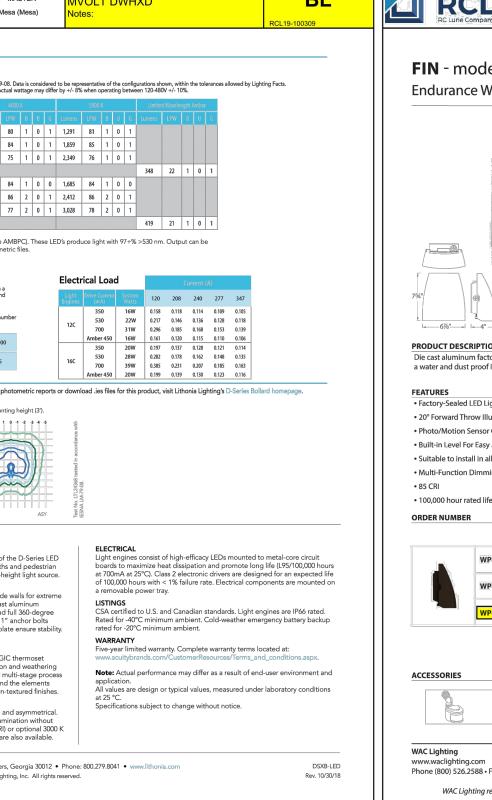


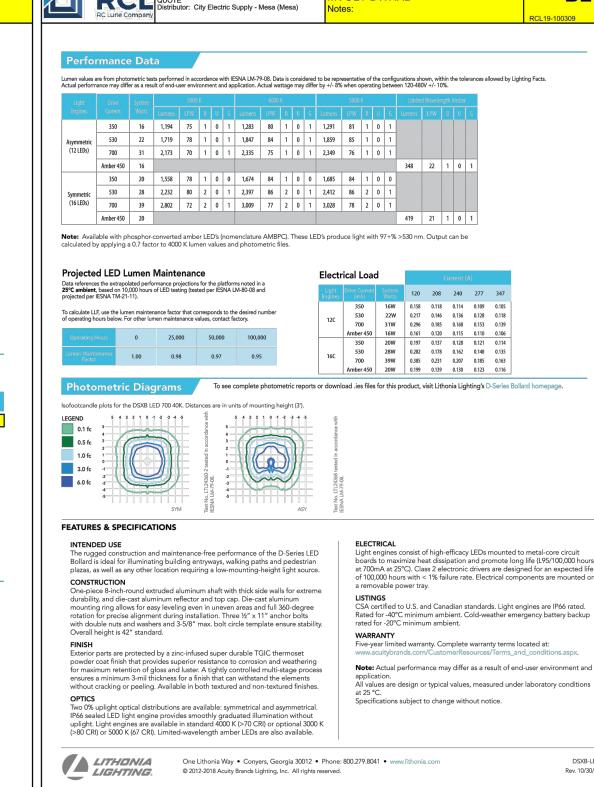


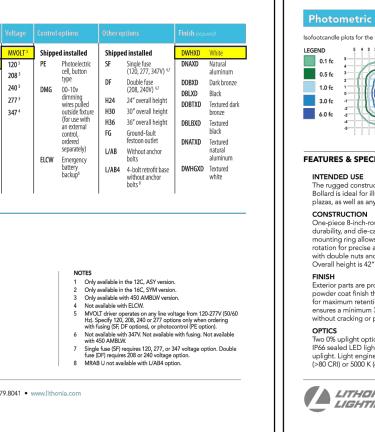


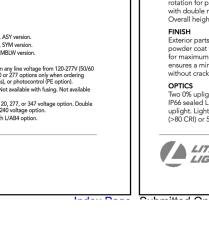












SPECIFICATIONS Construction: Die-cast aluminum Power: Integral driver in luminaire. Universal voltage input (120V-277V) Dimming: 100% - 30% with 0 - 10V dimmer (120V - 277V) 100% - 15% with Electronic Low Voltage (ELV) dimmer (120V only) Finish: Architectural Bronze, Graphite, and White Standards: IP66, Wet Location, FTL & cFTL Listed **Total Harmonic Distortion: 35%** Operating Temperature: -40°C (-40°F) to 40°C (104°F) PHOTOMETRY Left Plane Front Plane Power Comparable Color Temp Delivered Lumens CBCP Finish

LITHONIA LIGHTING* Gatalog Number SSS-20-4C-DM19AS-L/AB-DDBXD

SSS-12-4C-DM19AS-L/AB-DDBXD

WP

WAC LIGHTING

Responsible Lighting®

Anchor Base Poles

SQUARE STRAIGHT STEEL

SSS

POLE-SSS

FEATURES & SPECIFICATIONS

excellent torsional qualities. Available shaft widths are 4", 5" and 6".

side-mount luminaire arm assemblies or when ordered with PT option.

each pole assembly. Additional base cover options are available upon request.

Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

WARRANTY — 1-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms and conditions.aspx **NOTE**: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

OUTDOOR

fasteners are galvanized or zinc-plated carbon steel or stainless steel.

The handhole has a nominal dimension of 2.5" x 5".

 $\textbf{INTENDEDUSE} - \textbf{These specifications are for USA standards only. Check with factory for Canada and Standard Standar$

specifications. Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights This pole provides a robust yet cost effective option for mounting area lights and floodlights. CONSTRUCTION — Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI $\,$

(11-gauge, 1196"), or 50 KSI (7-gauge, 1793"). Shaft is one-piece with a full-length longitudinal high-

frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and

Pole Top: A flush non-metalic black top cap is provided for all poles that will receive drilling patterns for

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side

A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with

Anchor Base/ Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be

altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured

to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI).

HARDWARE – All structural fasteners are high-strength galvanized carbon steel. All non-structural

FINISH — Extra durable standard powder-coat finishes include Dark Bronze, White, Black, Medium Bronze

and Natural Aluminum colors. Classic finishes include Sandstone, Charcoal Gray, Tennis Green, Bright Red and Steel Blue colors, Architectural Colors and Special Finishes are available by quote and include, but

are not limited to Hot-dipped Galvanized, Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes. Factory-applied primer paint finish is available for customer field-paint

 $port-Outdoor for further information. \ Every handhole includes a cover and cover attachment hardware.$

Photo Sensor (120V)

Western Distribution Center 1750 Archibald Avenue • Ontario, CA 91760 44 Harbor Park Drive • Port Washington, NY 11050 Phone (516) 515.5000 • Fax (516) 515.5050 Phone (800) 526.2588 • Fax (800) 526.2585 WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program. AUG 2017

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RSX1 LED

9 6

Speed

— L — -

30K 3000K (R2) (Type 2 Wide)

40K 4000K **R3** Type 3 Wide

50K 5000K R3S Type 3 Short

R4 Type 4 Wide

R4S Type 4 Short

R5 Type 5 Wide 1

R5S Type 5 Short 1

AFR Automotive Front Rov

AFRR90 Automotive Front Row

AFRL90 Automotive Front Row Left Rotated

Shipped Installed

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3-1/2" O.D. (3" NPS)

4" O.D. (3-1/2" NPS)

KAC/KAD/KSE/KSF/KVR/KVF Drill mounting³

CSX/DSX/RSX/AERIS™/OMERO™ HLA/KAX Drill mounting³

DM28AS 2 at 180°

DM29AS 2 at 90°

DM39AS 3 at 90°

DM49AS 4 at 90°

RAD drill mounting³

DM19RAD 1 at 90°

DM29RAD 2 at 90°

DM28RAD 2 at 180°

DM32RAD 3 at 120°

DM39RAD 3 at 90°

DM49RAD 4 at 90°

DM19 1 at 90°

DM28 2 at 180°

DRDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

4C 4" 11g (.1196") <u>Tenon mounting</u>

4G 4" 7g (.1793") PT

5C 5" 11g (.1196")

See technical information table for complete ordering information.)

5G 5" 7g (.1793") T20

6G 6" 7g (.1793") T25

NLTAIR2 nLight AIR generation 2 12,13,14

Shipped Separately (requires some field assembly)

External glare shield 6

Specifications

13.3" (33.8 cm)

7.2" (18.4 cm) Arm

31.0 lbs (14.1 kg)

Ordering Information

Shipped Installed

HS House-side shield 6

Photocontrol, button style 78

Conduit entry 3/4" NPT (Qty 2)

Single fuse (120, 277, 347) 4

SPD20KV 20KV Surge pack (10KV standard)

LITHONIA LIGHTING.

COMMERCIAL OUTDOOR

Field adjustable output 8,12

Double fuse (208, 240, 480) 4

SSS Square Straight Steel Poles

5-20' POLES

1. Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.1196" | "G" - 0.1793".

Refer to the fixture spec sheet for the correct drilling template pattern

PT open top poles include top cap. When ordering tenon mounting drill mounting for the same pole, follow this example: DM28/T20.

The combination includes a required extra handhole.

4. Insert "1" or "2" to designate fixture size; e.g. DM19AST2.

LITHONIA LIGHTING

OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 800-705-SERV (7378) www.lithonia.com

and orientation compatibility.

1-12' POLE

Photocontrol external threaded, adjustable 83

Seven-wire twist-lock receptacle only (no control

(ft²@0°):

Length:

Area Luminaire

NSHTINK COLUMN C

FA FI HILLIAN

(use specific voltage for options as noted)

PIRHN Networked, Bi-Level motion/ambient sensor (for use with NLTAIR2) 12,14,15

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.acuitybrands.com

2-3/8" O.D. (2" NPS) DM28AST_ 2 at 180° VD

2-7/8" O.D. (2-1/2" DM29AST_ 2 at 90° TP

For "x": Specify the height above the base of pole in feet or feet

": Specify orientation from handhole (A,B,C,D)

Example: 1/2" coupling at 5'8", orientation C = CPL12/5-8C

Horizontal arm is 18" x 2-3/8" 0.D. tenon standard, with radius curve providing 12" rise and 2-3/8" 0.D. If ordering two horizontal arm at the same height, specify with HAxyy. Example: HA20BD.

Example: 5ft = 5 and 20ft 3in = 20-3

*Note: PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage

AERIS "Suspend drill mounting3.4 L/AB Less anchor anchor bol

Vibration damper

DM49AST_ 4 at 90° HAxy Horizontal arm bracket (1 fixture)^{5,6}

EHHxy Extra handhole^{5,7}

MAEX Match existing⁸

IC Interior coating¹⁰

USPOM United States point of manufacture9

UL UL listed with label (Includes NEC

Shipped separately (replacement kit available)

. Combination of tenon-top and drill mount includes extra handhole

Architectural Colors brochure (Form No. 794.3). Available by forma

8. Must add original order number of existing pole(s).

11. Additional colors available; see www.lithonia.com/archcolors

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9. Use when mill certifications are required.

Provides enhanced corrosion resistance.

quote only, consult factory for details.

NEC NEC 410.30 compliant gasketed

(blank) FBC Full base cover (plastic)

(blank) TC Top cap

(blank) HHC Handhole cover

OMERO™ Suspend drill mounting^{3,4} FDLxy Festoon outlet less electrical⁵ CPL12/xy 1/2" coupling⁵

DM19MRT_ 1 at 90° CPL34/xy 3/4" coupling⁵

DM28MRT_ 2 at 180° CPL1/xy 1" coupling⁵

DM29MRT_ 2 at 90° NPL12/xy 1/2" threaded nipple⁵

DM39MRT_ 3 at 90° NPL34/xy 3/4" threaded nipple⁵

DM49MRT_ 4 at 90° NPL1/xy 1" threaded nipple⁵

Introduction

luminaires.

are available.

The new RSX LED Area family delivers maximum

lumens allowing it to replace 70W to 400W HID

The RSX features an integral universal mounting

mechanism that allows the luminaire to be mounted

on most existing drill hole patterns. This "no-drill"

easy-access door on the bottom of mounting arm

allows for wiring without opening the electrical

compartment. A mast arm adaptor, adjustable

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

MVOLT (120V-277V)² SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°)

MA Mast arm adaptor (fits 2–3/8" OD horizontal tenon)

AAWSC Adjustable tilt arm wall bracket and surface conduit box 5

IS Adjustable slipfitter (fits 2–3/8" OD tenon) 5

WBASC Wall bracket with surface conduit box

AASP Adjustable tilt arm square pole mounting

AARP Adjustable tilt arm round pole mounting 5

AAWB Adjustable tilt arm with wall bracket 5

WBA Wall bracket 1

*Standalone and Networked Sensors/Controls (factory default settings, see table page 9) DBLXD Black

integral slipfitter and other mounting configurations

DNAXD Natural Aluminum

DBLBXD Textured Black

DWHGXD Textured White

Example: SSS 20 5C DM19 DDB

Standard colors

DMBXD Medium

DNAXD Natural aluminum

DSS Sandstone

DTG Tennis green

DBR Bright red

DSB Steel blue

Galvanized, Paint over Galvanized, RAL Colors,

Custom Colors and

Extended Warranty Finishes available.

POLE-SSS

Classic colors

DDBTXD Textured Dark Bronze

DNATXD Textured Natural Aluminum

solution provides significant labor savings. An

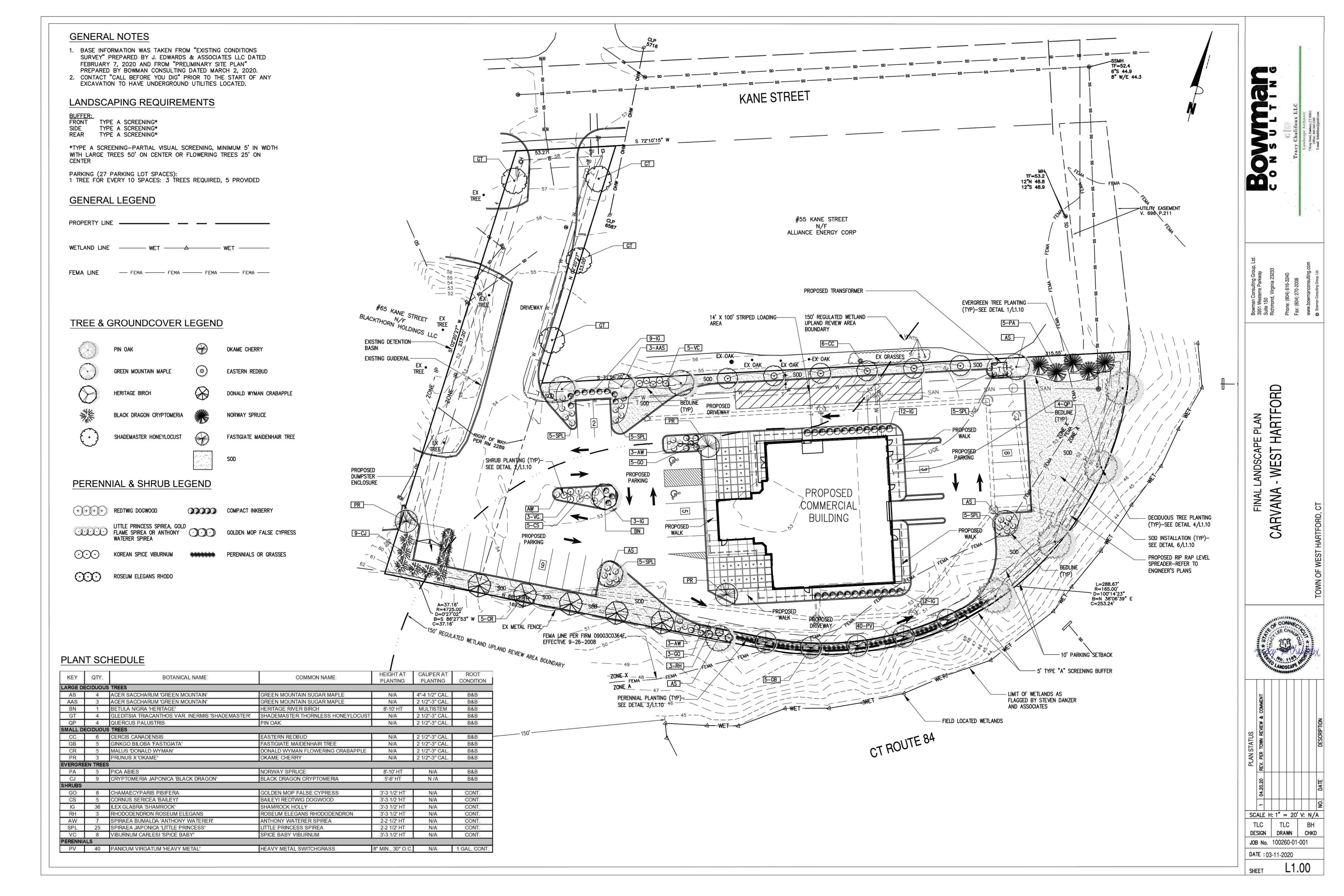
value by providing significant energy savings, long

life and outstanding photometric performance at an

affordable price. The RSX1 delivers 7,000 to 17,000

BCG DESIGN | DRAWN | CHKD

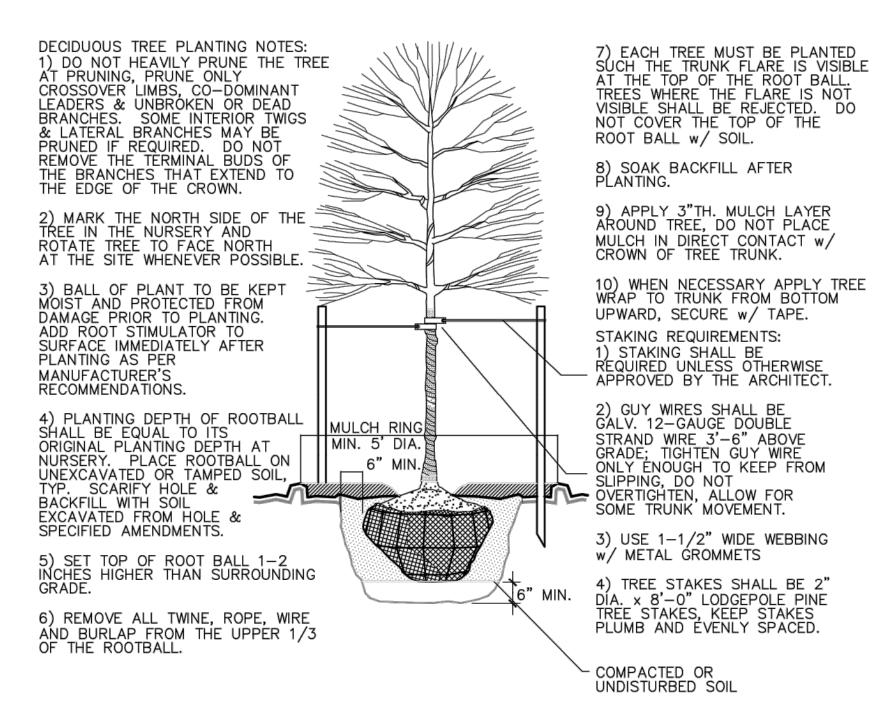
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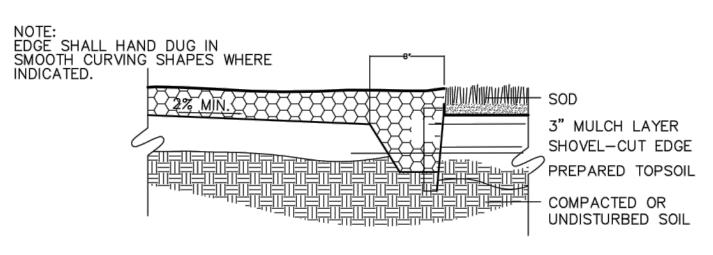
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SCALE H: AS SHOWN V: N/A TLC

TLC DESIGN DRAWN CHKD JOB No. 100260-01-001 DATE: 03-11-2020 SHEET



DECIDUOUS TREE PLANTING SCALE: N.T.S.



SHOVEL-CUT EDGING SCALE: N.T.S.

SOD INSTALLATION NOTES: I) FINISHED GRADES SHALL BE 2) CULTIVATE ENTIRE AREA TO A MÍNIMUM 6" DEPTH. EXCEPTIONS TO AREAS MAY BE MADE IF TREE NEW SOD AREA ROOTS ARE ENCOUNTERED WITHIN THE DRIPLINE OF EXISTING TREES. GRADE PVMT. HAND RAKE SMOOTH. ADD ADDITIVES (AS PER SOIL JLTIVATED SOI TÉST RECOMMENDATIONS) AND TILL 4) LAY AND ROLL SOD. WATER THOROUGHLY. -UNDISTURBED SUBGRADE

SOD INSTALLATION SCALE: N.T.S.

TOP OF THE ROOT BALL. TREES WHERE THE FLARE IS LEADERS & UNBRÔKEN OR DEAD NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BRANCHES. SOME INTERIOR TWIGS & LATERAL BRANCHES MAY BE PRUNED IF REQUIRED. DO NOT REMOVE THE TERMINAL BUDS OF THE BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN. BALL w/ SOIL. 3) SOAK BACKFILL AFTER 2) MARK THE NORTH SIDE OF THE TREE IN THE NURSERY AND 9) APPLY 3"TH. MULCH LAYER AROUND TREE, DO ROTATE TREE TO FACE NORTH AT THE SITE WHENEVER POSSIBLE. NOT PLACE MULCH IN DIRECT CONTACT W/ CROWN 3) BALL OF PLANT TO BE KEPT MOIST AND PROTECTED FROM DAMAGE PRIOR TO PLANTING. ADD ROOT STIMULATOR TO FOR TREE TRUNK STAKING REQUIREMENTS: 1) STAKING SHALL BE REQUIRED UNLESS OTHERWISE APPROVED BY SURFACE IMMEDIATELY AFTER THE ARCHITECT. PLANTING AS PER MANUFACTURER'S RECOMMENDATIONS. 2) GUY WIRES SHALL BE GALV. 12-GAUGE DOUBLE STRAND WIRE 3'-6" ABOVE GRADE; TIGHTEN GUY WIRE ONLY ENOUGH TO KEEP 4) PLANTING DEPTH OF ROOTBALL SHALL BE EQUAL TO ITS ORIGINAL PLANTING DEPTH AT NURSERY. PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL, TYP. SCARIFY HOLE & BACKFILL WITH SOIL EXCAVATED FROM HOLE & SPECIFIED FROM SLIPPING, DO NOT OVERTIGHTEN, ALLOW FOR SOME TRUNK MOVEMENT. 6" MIN. 3) USE 1-1/2" WIDE WEBBING W/ METAL AMENDMENTS. GROMMETS 5) SET TOP OF ROOT BALL 1-2 INCHES HIGHER THAN TREE STAKES SHALL BE SURROUNDING GRADE. DIA. x 8'-0" ODGEPOLE PINE TREE 6) REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM THE UPPER STAKES, KEEP STAKES PLUMB AND EVENLY 1/3 OF THE ROOTBALL. SPACED.

EVERGREEN TREE PLANTING

SCALE: N.T.S.

EVERGREEN TREE PLANTING NOTES:

DO NOT HEAVILY PRUNE THE

TREE AT PRUNING, PRUNE ONL'

CROSSOVER LIMBS, CO-DOMINANT

SHRUB PLANTING NOTES: 1) SET SHRUB AT SAME DEPTH AT WHICH IT GREW IN THE FIELD OR CONTAINER.

2) PRUNE, THIN & SHAPE SHRUBS IN ACCORDANCE W/ STANDARD HORTICULTURAL PRACTICE

3) BALL OF PLANT TO BE KEPT MOIST AND PROTECTED FROM DAMAGE PRIOR TO PLANTING. A ROOT STIMULATOR TO SURFACE IMMEDIATELY AFTER PLANTING AS PER MANUFACTURER'S RECOMMENDATIONS.

4) WHEN BACKFILL IS 2/3 COMPLETE, WATER THOROUGHLY UNTIL NO MORE IS ABSORBED.

PLACE PLANT IN VERTICAL PLUMB POSITION PRUNE BROKEN AND DAMAGED TWIGS AFTER **PLANTING** TH LAYER MULCH PEEL BACK BURLAP FROM TOP OF ROOTBALL OR REMOVE CONTAINER BACKFILL WITH EXCAVATED SOIL & SPECIFIED ADDITIVES COMPACTED OR UNDISTURBED SOIL

UNDISTURBED SOIL

7) EACH TREE MUST BE PLANTED SUCH THE TRUNK FLARE IS VISIBLE AT THE

SHRUB PLANTING

PERENNIAL PLANTING NOTES: 1) BREAK UP EXISTING TOPSOIL TO A DEPTH OF 24"

2) PROVIDE NEW TOPSOIL TO A DEPTH OF

THOROUGHLY MIX PEAT IN TOP 3-4" OF

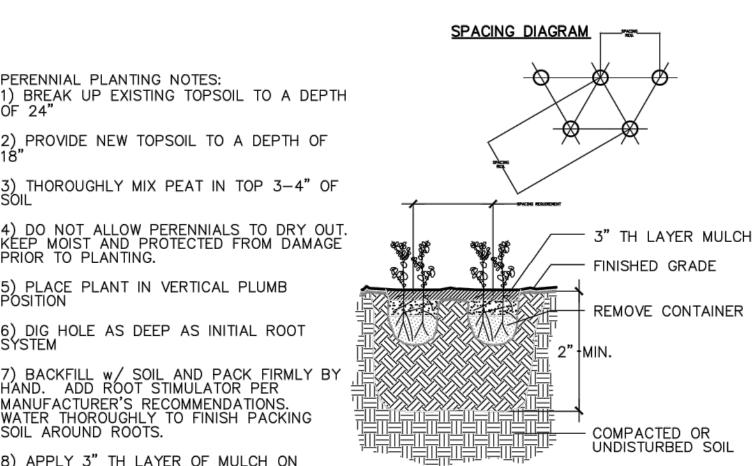
KEEP MOIST AND PROTECTED FROM DAMAGE PRIOR TO PLANTING.

5) PLACE PLANT IN VERTICAL PLUMB POSITION

6) DIG HOLE AS DEEP AS INITIAL ROOT SYSTEM

7) BACKFILL w/ SOIL AND PACK FIRMLY BY HAND. ADD ROOT STIMULATOR PER MANUFACTURER'S RECOMMENDATIONS. WATER THOROUGHLY TO FINISH PACKING SOIL AROUND ROOTS.

8) APPLY 3" TH LAYER OF MULCH ON PERENNIAL PLANT BED, DO NOT COVER



PERENNIAL PLANTING

SCALE: N.T.S.

LANDSCAPING NOTES

THE LANDSCAPE CONTRACTOR SHALL READ ALL LANDSCAPE PLANS, SPECIFICATIONS AND VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.

2. ANY AND ALL QUESTIONS CONCERNING THE LANDSCAPE PLANS AND SPECIFICATIONS SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA 2) TO PROTECT OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.

4. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING, MULCHING, AND OTHER REQUIREMENTS OF PLANT MATERIALS WHILE THEY ARE TEMPORARILY STORED ON OR OFF SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING PER SPECIFICATIONS TO MAINTAIN HEALTHY PLANT CONDITIONS.

THE LANDSCAPE CONTRACTOR SHALL COORDINATE LAYOUT OF PLANTING BEDS, PLANT MASSING, STAKED LOCATION OF TREES AND INSTALLATION OF PLANT MATERIAL WITH LANDSCAPE ARCHITECT PRIOR TO COMMENCEMENT OF WORK.

6. ALL PLANT MATERIAL (EXCEPT SHADE TREES) IS DELINEATED AT MATURE SIZE OF PLANT MATERIAL. SHADE TREES ARE DELINEATED AT 85% OF ACTUAL MATURE SIZE. ALL TREES SHALL HAVE A STRAIGHT TRUNK AND FULL HEAD AND MEET ALL REQUIREMENTS SPECIFIED.

7. ALL LANDSCAPE MATERIAL SHALL MEET THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-1996) PER THE AMERICAN ASSOCIATION OF NURSEYMEN. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE. ALL PLANT MATERIAL SHALL BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.

8. PER OWNER'S DIRECTION, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO INSPECT ALL PLANT MATERIAL AT THE NURSERY, PRIOR TO SELECTION OR DIGGING.

9. CONDUCT PLANTING UNDER FAVORABLE WEATHER CONDITIONS DURING EITHER THE SPRING PLANTING SEASON, MARCH 1 TO JUNE 1, OR THE FALL PLANTING SEASON, SEPTEMBER 30 UNTIL FREEZING OF THE GROUND. DURING THE FALL PLANTING SEASON, CONIFEROUS MATERIAL PLANTING SHALL BE CONDUCTED AUGUST 15 TO OCTOBER 1.
DEVIATION FROM THE ABOVE PLANTING DATES WILL ONLY BE PERMITTED WITH APPROVAL IN WRITING BY THE LANDSCAPE ARCHITECT.

10. THE PLANTING SOIL MIXTURE FOR ALL TREE PLANTINGS SHALL INCLUDE SOIL EXCAVATED FROM THE HOLE. RATIO: 50% VIRGIN SOIL + 50% AMENDED TOP SOIL.

11. ROOT STIMULATOR SHALL BE APPLIED TO ALL PLANT MATERIALS WITH THE EXCEPTION OF LAWN AREAS. APPLY AS PER THE MANUFACTURERS SPECIFICATIONS.

12. THE LANDSCAPE CONTRACTOR SHALL RESTORE FINISH GRADES IN ALL PLANTING AREAS (PER GRADING PLANS) WHICH MAY HAVE BEEN DISTURBED DURING PLANTING

13. ALL TREE SAUCERS AND PLANTING BEDS ARE TO BE MULCHED WITH A MINIMUM OF 3" DOUBLE-GROUND HARDWOOD MULCH (COLOR DYED DARK BROWN). LANDSCAPE CONTRACTOR TO PROVIDE MULCH SAMPLE TO LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION. WHERE PLANTING BEDS ARE ADJACENT TO WALKS AND CURBS THE SOIL LEVEL SHALL BE 3" LOWER TO ALLOW FOR MULCH LAYER. WHERE SOD IS INDICATED, ITS THICKNESS SHALL ALSO BE ACCOUNTED FOR SO THAT THE SOIL SURFACE IN THE SOD IS 1/2" BELOW THE HARDSCAPE SURFACE.

14. ALL SHRUB/PERENNIAL PLANTING BEDS SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE SUCH AS TREFLAN OR EQUAL, APPLY PER MANUFACTURER'S SPECIFICATIONS. THE PRE-EMERGENT SHALL NOT BE APPLIED UNTIL AFTER ALL PLANTING WITHIN THESE AREAS IS COMPLETE, BUT BEFORE THESE AREAS ARE MULCHED. DO NOT DISTURB AREAS AFTER APPLICATION. WATER IN AS DIRECTED.

15. MULCH, STAKES, GUY WIRE, PRE-EMERGENT HERBICIDES, ETC. SHALL BE SUBSIDIARY TO INDIVIDUAL PLANTS.

16. ALL SLOPES THAT EXCEED A 3:1 GRADE SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET WITH NORTH AMERICAN GREEN S150. INSTALL PER THE MANUFACTURER'S SPECIFICATIONS.

17. LABEL EACH TREE AND SHRUB WITH A SECURELY ATTACHED. WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF BOTH BOTANICAL AND COMMON NAME. LABEL EACH ORNAMENTAL GRASS, GROUNDCOVER, PERENNIAL AND ANNUAL WITH THE LABEL PROVIDED BY THE ORIGINAL GROWER OF THE PLANT. LABELS SHALL NOT BE REMOVED UNTIL AFTER PROVISIONAL ACCEPTANCE BY LANDSCAPE ARCHITECT

18. STAKES AND GUY WIRES SHALL BE REMOVED AT THE END OF ONE FULL GROWING SEASON.

19. LOOSEN SOIL FOR ALL PLANTING ISLANDS AND SHRUB/PERENNIAL BEDS TO A DEPTH OF 12". ALL AREAS DENOTED AS SOD (LAWN AREAS) SHALL HAVE A 6" MINIMUM TOPSOIL LAYER. TOPSOIL SHALL BE LAID IN 3" LIFTS. IN AREAS WHERE CONSTRUCTION GRADING HAS NOT OCCURRED AND THE VIRGIN GRADES YET EXIST, THE TOPSOIL LAYER MAY NOT BE REQUIRED BASED ON THE DECISION OF THE LANDSCAPE ARCHITECT.

20. TOPSOIL SHALL BE FERTILE NATURAL TOPSOIL, TYPICAL OF THE LOCALITY, OBTAINED FROM WELL DRAINED AREAS. STOCKPILED TOPSOIL MAY BE USED. IT SHALL BE WITHOUT ADMIXTURE OF SUBSOIL OR SLAG AND SHALL BE FREE OF STONES, LUMPS, STICKS, PLANTS OR THEIR ROOTS, TOXIC SUBSTANCES OR OTHER EXTRANEOUS MATTER THAT MAY BE HARMFUL TO PLANT GROWTH OR WOULD INTERFERE WITH FUTURE MAINTENANCE. TOPSOIL PH RANGE SHALL BE 5.5 TO 7.0.

21. THERE SHALL BE NO ADDITIONS, DELETIONS OR SUBSTITUTION OF PLANT MATERIAL SPECIES WITHOUT THE WRITTEN APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT. ANY SUBSTITUTION THAT HAS NOT BEEN APPROVED SHALL BE REMOVED AND REPLACED WITH THE CORRECT PLANT AT LANDSCAPE CONTRACTOR'S EXPENSE.

22. THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER AN UNCONDITIONAL 2-YEAR WARRANTY OF PLANT MATERIAL SHALL BEGIN FROM THE TIME OF HANDLING PLANT MATERIAL AT TIME OF DELIVERY THROUGH INSTALLATION AND END AFTER SUBSTANTIAL COMPLETION AND FINAL PUNCH-LIST APPROVAL BY LANDSCAPE ARCHITECT. WARRANTY SHALL INCLUDE ALL LABOR REQUIRED REPLACING MATERIALS ON-SITE.

23. THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR THE COLLECTION, REMOVAL, AND PROPER DISPOSAL OF ANY AND ALL DEBRIS GENERATED DURING THE INSTALLATION OF THE LANDSCAPE CONSTRUCTION.

24. COORDINATE WITH THE OWNER AND GENERAL CONTRACTOR FOR SLEEVE LOCATIONS AND TIMING OF SLEEVE INSTALLATION. IF AN IRRIGATION IS REQUIRED, ALL SLEEVING REQUIRED UNDER HARDSCAPE SURFACES FOR THE IRRIGATION SYSTEM SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR.

25. IF AN IRRIGATION SYSTEM IS REQUIRED, COORDINATE LANDSCAPE PLANTING WITH IRRIGATION CONTRACTOR. THE TREE PLANTINGS SHALL BE IN PLACE BEFORE IRRIGATION LINE ROUTING BEGINS, WATER TREES BY HAND UNTIL IRRIGATION SYSTEM IS FULLY FUNCTIONAL. SHRUBS AND PERENNIALS SHALL NOT BE INSTALLED UNTIL THE IRRIGATION SYSTEM IS FULLY FUNCTIONAL. THE IRRIGATION SYSTEM SHALL BE COMPLETE AND FULLY FUNCTIONAL IN ALL LAWN AREAS BEFORE SOD IS PLACED.

26. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.

27. THIS PLAN IS TO BE IMPLEMENTED COOPERATIVELY WITH SWPPP PLAN, AS NEEDED, TO MAXIMIZE THE EFFECTIVENESS OF THE SWPPP PLAN FOR THIS SITE. THE CONTRACTOR IS ENCOURAGED TO COMPLETE TEMPORARY OR PERMANENT SEEDING OR SODDING IN STAGES FOR SOIL STABILIZATION AS AREAS ARE COMPLETED AFTER GRADING. THIS PLAN DOES NOT PRESENT ANY TEMPORARY STABILIZATION REQUIRED AS PART OF SWPPP

28. IF AN IRRIGATION SYSTEM IS REQUIRED, AN IRRIGATION SYSTEM FOR ALL LANDSCAPED AREAS CONSISTING OF GRASS (EXCLUDING OPEN FIELDS OF FIVE (5) ACRES OR MORE) AND FORMAL LANDSCAPING SHALL BE DESIGNED AND INSTALLED TO PROVIDE FOR PROPER WATERING OF SUCH AREAS.

(THIS LIST ADAPTED FROM GEOTECHNICAL ENGINEERING SERVICES REPORT FOR PROPOSED CARVANA CAR VENDING MACHINE TOWER, PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC., DATED MARCH 16, 2020 (PSI PROJ 08061161); REFER TO REPORT FOR FULL RECOMMENDATIONS) 3.1 GENERAL

The following geotechnical design recommendations have been developed on the basis of the previously described project characteristics and encountered subsurface conditions. If there are any changes in these project criteria, including structure locations on the site, a review should be made by Professional Service Industries, Inc. to determine if modifications to the recommendations are necessary.

Once final design plans and specifications are available, a general review by Professional Service Industries, Inc. is recommended as a means to check that the evaluations made in preparation of this report are consistent with final construction plans and that earthwork and foundation recommendations are properly interpreted and implemented.

Based on the results of Professional Service Industries, Inc.'s fieldwork, laboratory testing, and engineering analyses, the site appears suitable for the proposed structure and associated improvements provided the following recommendations are incorporated into the design and construction of the project. The primary geotechnical considerations for the development of the site will be the previous site development, the presence of undocumented man-placed fill materials, in the vicinity of boring B-4, the bottom of footing excavation will be very loose/loose and/or wet, and the moisture susceptibility of the on-site soils.

Due to the site development history, it must be recognized that subsurface conditions within the footprint of the proposed Carvana automobile sales facility and the future development area may vary from conditions encountered at the boring locations. Be aware that a portion of the proposed Carvana automobile sales facility is located within the footprint of the existing structure where drilling was not permitted. Therefore, the excavation of test pits and/or additional soil borings after demolition could be performed to explore the adequacy of removal of prior construction/demolition debris as well as the subsurface conditions of proposed new construction which was not able to be explored at the time of this report.

Man-placed fill soils were observed at boring locations B-1 and B-4. A representative of the geotechnical engineer should verify the depth of fill at the time of construction. Based on the boring, the existing man-placed fill is considered suitable for support of the proposed interior floor and/or pavements, provided proofroll/compaction acceptance utilizing a minimum fifteen (15) ton smooth drum vibratory roller operating in the vibratory mode.

It must be recognized that footing excavations will extend into very loose/loose and/or wet soils in the

vicinity of boring location B-4, which will require the footing excavations to be undercut and/or choked with coarse aggregate such as ConnDOT M.02.02 processed gravel prior to reinforcement and Portland cement concrete placement. The lateral limits of the undercut/over-excavation should be defined by a line drawn outward and downward at 1H: 2V from the perimeter of the foundation bearing area. Field conditions will dictate the extent to any undercuts.

It must be recognized that soils that contain silt and clay are difficult to dry during wet or cool season. Careful attention to moisture content and compactive effort is important in dealing with such soils. The soils may need to be scarified and dried to a moisture content that will facilitate compaction in accordance with the structural fill requirements of this report. Portland Cement stabilization for silty soils (a fly ash / lime / kilndust for cohesive soils) may be necessary in order to expedite the work and achieve the required level of soil compaction.

Should the site grades be raised more than one (1) to two (2) feet, it is imperative that Professional Service Industries, Inc. be contacted immediately to review our recommendations made in this report.

With the previous mentioned considerations in mind, it is Professional Service Industries, Inc.'s opinion that the proposed single-story structure can be supported on shallow spread-type footings bearing on existing natural soils and/or engineered fill. The proposed five-tier car vending machine tower can be supported on a mat-type foundation supported on natural soils. The building interior floors can be constructed on properly prepared subgrades following proofroll/proof-compaction acceptance of existing natural soil subgrade, qualified existing man-placed fill materials, and/or engineered fill. The proposed pavement can be constructed on properly prepared subgrades following proofroll/compaction acceptance of natural soil subgrade, qualified existing man-placed fill materials, and/or engineered fill.

3.2 SITE PREPARATION

Unless specifically indicated otherwise in the drawings and/or specifications, the limits of this subsurface preparation are considered to be that portion directly beneath and ten (10) feet beyond the building and appurtenances. Appurtenances are those items attached to the building and typically include, but are not limited to, the building sidewalks, porches, stoops,

Site preparation should commence with the removal of the existing asphaltic concrete pavements, existing old foundations, floor slabs, walls, vegetation/grass/topsoil and any deleterious materials. The geotechnical engineer of record or his representative should determine the depth of removal at the time of construction. Underground storage tanks, abandoned utilities, old foundations or other features not evident at the time of Professional Service Industries, Inc.'s investigation should also be removed. Professional Service Industries, Inc. recommends that all topsoil and loose and wet or deleterious soils in the construction areas be stripped from the site and either wasted or stockpiled for later use in landscaping. The geotechnical engineer of record or his representative should determine the depth of removal at the time of construction. However, the existing on-site fill materials that are free of organic or other deleterious materials may remain in-place provided the fill soils have been proof—compacted with a minimum fifteen (15) ton smooth drum vibratory roller, operating in the vibratory mode making a minimum of four (4) passes, in order to confirm stability/suitability.

After removal of the existing asphaltic concrete pavements, existing old foundations, floor slabs, walls, grass/topsoil/vegetation, loose and wet soils and other deleterious materials, the exposed undercut areas should be brought back up to proposed grades with compacted engineered fill. Prior to placement of the engineered fill, the geotechnical engineer of record or his representative should observe the subgrade condition. Fill material and compaction requirements are discussed in more detail in the following paragraphs.

Professional Service Industries, Inc. has not been provided with any final grading plans and we do not know at this time how surface elevations will change at the time of construction. Additional site preparation will depend upon the proposed site grades and building features. Prior to the beginning of fill placement activities, Professional Service Industries, Inc. recommends that all areas receiving new fill be proof-compacted. Proof-compaction operations should be performed using a minimum fifteen (15) ton smooth drum vibratory roller, operating in the vibratory mode. Proof-compaction operations should be observed by the geotechnical engineer of record or his representative and should continue until a firm and unyielding condition exists (typically less than three-quarters inch ruts). Unstable soils which are revealed by proof-compaction and which cannot be adequately densified in place should be removed and replaced with ConnDOT M.02.02 processed gravel under the recommendations of the geotechnical engineer of record or his representative. Additionally, depending on weather conditions and precipitation at the time of construction, the use of additional stabilization techniques such as choking the subgrade with coarse aggregate may be required in the upper eighteen (18) inches of the exposed subgrade. Field conditions will dictate the extent of any undercuts.

During the site area grading, zones of perched groundwater most probably will be encountered. Local undercutting and pumping to remove water may be required when such zones are encountered, and provisions should be made in this regard by the builder.

After subgrade preparation and observation have been completed, fill placement may begin.

The first layer of fill material should be placed in a relatively uniform horizontal lift and be adequately keyed into the stripped subgrade soils.

During site preparation, filled sidewalk vaults, burn pits, old foundations, trash pits or other isolated disposal greas may be encountered. All too frequently such buried material occurs in isolated areas outside boring locations. Any such material encountered during site work or foundation construction should be excavated and removed from the site.

3.3 FILL MATERIAL AND PLACEMENT

After the performance of cutting to design subgrade, Professional Service Industries, Inc. recommends that proof-compaction operations should be performed using a 15-ton (static weight) smooth drum vibratory roller. Proof-compaction operations should be observed by a representative of Professional Service Industries, Inc. and should continue until a firm and unyielding condition exists (typically less than three—quarters inch ruts). Unstable soils which are revealed by proof-compaction and which cannot be adequately densified in-place should be removed and replaced with structural fill.

Materials placed as fill should meet the requirements of structural fill as provided in this section. It is also recommended that Professional Service Industries, Inc. be retained to perform field density testing during fill placement.

Subgrade areas should be kept properly drained and free of ponded water surfaces. This may be achieved by sloping the exposed pad so that storm water can flow off the pad.

Based on the results of soil classifications, the existing on—site soils at the project site generally consists of undocumented man-placed fill materials (B-1 and B-4) and native granular soils. The on-site undocumented man-placed fill materials containing non-soil material such as glass and organics are not suitable for reuse as structural fill material. The native on-site granular soils below the existing fill and below the pavement section at boring locations B-2, B-3, B-5, B-6, B-7, and B-8 can be considered for reuse as structural fill, as long as the soils are placed within an acceptable moisture condition, and free of organic or other deleterious materials. It must be recognized that soils that contain silt and clay are difficult to dry during wet or cool season. Careful attention to moisture content and compactive effort are important in dealing with such soils and it is typical for wet or cool season grading operations to be hindered by the continual need to dry back silty and clayey soils during placement. It is advantageous to place a working course of compacted graded aggregate base over building and roadway areas between the time of initial grading and final floor slab construction. The graded aggregate base may need periodic replenishment depending on weather and traffic conditions during construction.

The on-site native soils will be very sensitive to moisture content variations. This general sensitivity to water will influence construction, since subgrade support capacities may deteriorate when this soil type becomes wet and/or disturbed. It is not unusual for wet or cool season grading operations to be hindered by the continual need to dry back the on-site natural soils during placement. If fill placement must proceed during other than the summer months, the use of imported granular fill with less than ten (10) percent passing the No. 200 sieve may be

On-site or imported structural fill materials should be free of organic or other deleterious materials. If grading results in a need for additional fill materials, the imported structural fill should have a maximum particle size less than three (3) inches, a modified Proctor maximum dry density greater than one hundred ten (110) pounds per cubic foot (pcf) and less than twenty (20) percent passing the No. 200 sieve. Structural fill should consist of non-expansive materials and not contain more than three (3) percent (by weight) of organic matter or other detrimental material. Typically, the Plasticity Index (PI) for the material should not exceed fifteen (15), and the Liquid Limit (LL) for the material should not exceed forty (40) (Unified Soil Classifications of GW, GM, GC, GP, SW, SM, SP, SC), unless otherwise allowed by the geotechnical engineer.

It must be recoanized that soils that contain silt and clay are difficult to dry during wet or cool season. Careful attention to moisture content and compactive effort is important in dealing with such soils. The soils may need to be scarified and dried to a moisture content that will facilitate compaction in accordance with the structural fill requirements of this report. Portland cement stabilization for silty soils (a fly ash/lime / kilndust for cohesive soils) may be necessary in order to expedite the work and achieve the required level of soil compaction.

If the structural fill for the site is imported, the geotechnical engineer should test and report on the proposed imported fill prior to purchase and delivery. Based upon the topography and location of the site, imported fill will probably be required. Fine-grained soils and the on-site soils used for fill require close moisture content control to achieve the recommended degree of compaction and are not recommended for use during wet weather construction. Structural fill soils should be moisture conditioned to between two (2) percent below and two (2) percent above optimum moisture content and placed in maximum eight (8)-inch lifts in the excavation. Structural fill should be compacted to at least ninety-five (95) percent of the maximum density as determined by the Modified Proctor Test (ASTM D-1557). Each lift of compacted fill should be tested for density by a representative of the geotechnical engineer prior to placement of subsequent lifts. If fill placement must proceed during other than the summer months, the use of imported granular fill with less than ten (10) percent passing the No. 200 sieve may be necessary.

3.8 UTILITIES TRENCHING

Excavation for utility trenches shall be performed in accordance with OSHA regulations as stated in 29 CFR Part 1926. It should be noted that utility trench excavations have the potential to degrade the properties of the adjacent fill materials. Utility trench walls that are allowed to move laterally can lead to reduced bearing capacity and increased settlement of adjacent structural elements and overlying slabs.

Backfill for utility trenches is as important as the original subgrade preparation or structural fill placed to support either a foundation or slab. Therefore, it is imperative that the backfill for

to meet the project specifications for the structural fill of this project and/or any local municipality requirements for utility trench backfill. In areas that are not accessible to construction personnel and standard compaction equipment, Professional Service Industries, Inc. recommends that flowable fill or lean mix concrete be utilized for utility trench backfill. If on-site soils are placed as trench backfill, the backfill for the utility trenches should be placed in four (4) to six (6) inch loose lifts and compacted to a minimum of ninety-five (95) percent of the maximum dry density achieved by the modified Proctor test (ASTM D-1557).

The backfill soil should be moisture conditioned to be within two (2) of the optimum moisture content as determined by the modified Proctor test. Up to four (4) inches of bedding material placed directly under the pipes or conduits placed in the utility trench can be compacted to the ninety (90) percent compaction criteria with respect to the modified Proctor (ASTM D-1557). Compaction testing should be performed for every two hundred (200) cubic yards of backfill placed or each lift within two hundred (200) linear feet of trench, whichever is less. Backfill of utility trenches should not be performed with water standing in the trench. If granular material is used for the backfill of the utility trench, the granular material should have a gradation that will filter protect the backfill material from the adjacent soils.

If material having this gradation is not available, a geosynthetic non-woven filter fabric should be used to reduce the potential for the migration of fines into the backfill material. Granular backfill material shall be compacted to meet the above compaction criteria. The clean granular backfill material should be compacted to achieve a relative density greater than 75% or as specified by the geotechnical engineer for the specific material used.

Utility trenches should be connected to a suitably located outlet point with an invert elevation two (2) feet below the minimum elevation along the utility trenches. The purpose of this outlet is to allow removal of water which may accumulate in the six (6) inches of bedding material. The outlet points should preferably discharge by gravity to the storm sewer system, but may discharge to sumps equipped with pumps if necessary.

Bedding the utility lines in CLSM typically is not a practical option, due to constructibility problems with flotation of the conduit in the CLSM. We anticipate that the combination of bitumen coating, limiting the granular material to the bedding depth, and completing backfill with CLSM should be sufficient to limit the risk of differential heave of the floor slab along utility trenches.

4.1 GROUNDWATER CONTROL

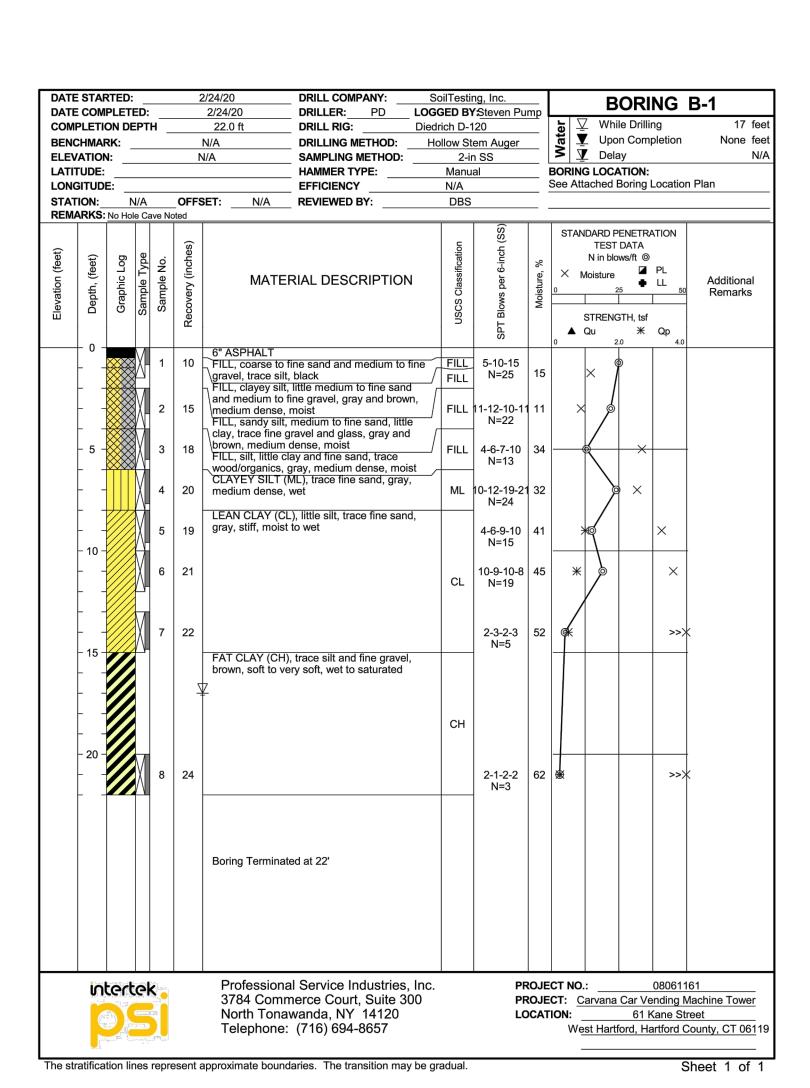
Overall site drainage is to be arranged in a manner to direct surface water away from the construction area including the slab and pavement subgrades and foundation excavations. A gravity drainage system, sump pump(s), or other conventional dewatering procedures are anticipated to be adequate for groundwater control in shallow excavations. The contractor should be permitted to employ whatever commonly accepted means and practices are necessary to maintain the groundwater level below the excavation, and to maintain a dry excavation during wet weather. Groundwater should be maintained a minimum of two (2) feet below the design subgrade elevation.

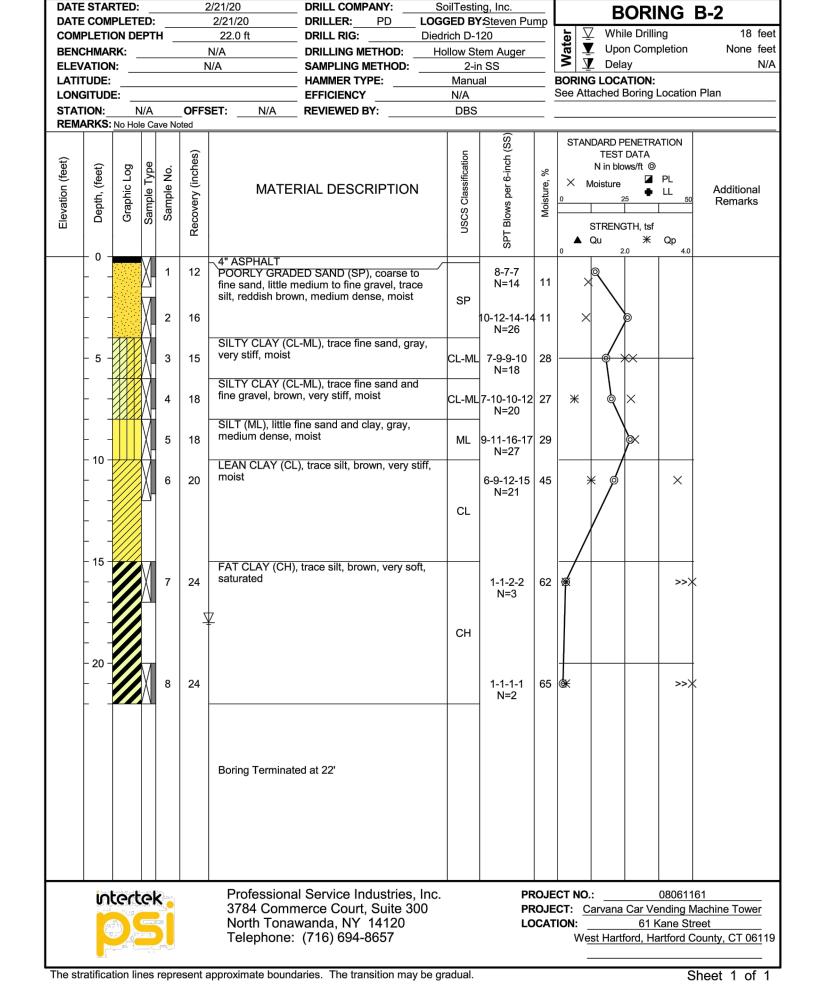
Proper perimeter drainage mechanisms should be provided along all exterior foundation members. The elevation of the drainage lines should be adjusted to keep water a minimum of two (2) feet below the design subgrade elevation. A free flowing granular drainage fill such as crushed stone is to be employed around all drainage lines with the granular drainage fill encased in a geotextile filter fabric. The perimeter drains should discharge to a storm sewer or drainage ditch by gravity.

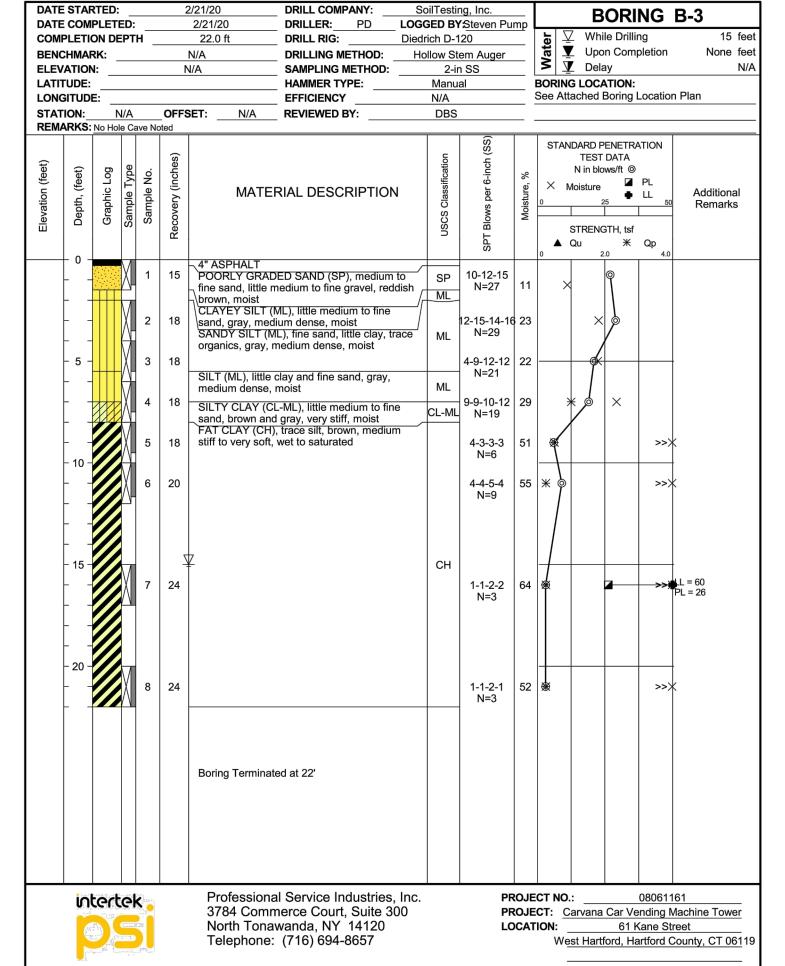
4.2 SUBGRADE PREPARATION

The near surface soils present at this site are sensitive to softening due to rainfall and traffic. It is our experience that damp or wet soils tend to rut under rubber tire vehicle traffic. Maintenance of entrance roads and other areas subjected to construction traffic, such as floor slab areas, is typically required until floor slab construction is completed. If near surface soils become wet and disturbed, excavation and replacement with suitable compacted fill will be necessary. For this site during wet or cool seasons, it is advantageous to place a working course of compacted graded aggregate base over building and roadway areas between the time of initial grading and final floor slab construction. The graded aggregate base may need periodic replenishment depending on weather and traffic conditions during construction.

Professional Service Industries, Inc. recommends that immediately prior to placement of stone and the beginning of floor slab construction, a representative of the Geotechnical Engineer evaluate the floor slab subgrades. If low density or otherwise unsuitable soils are encountered which cannot be adequately densified in place, such soils should be removed and replaced with well-compacted fill material placed in accordance with a previous section of this report or with well—compacted crushed stone materials.







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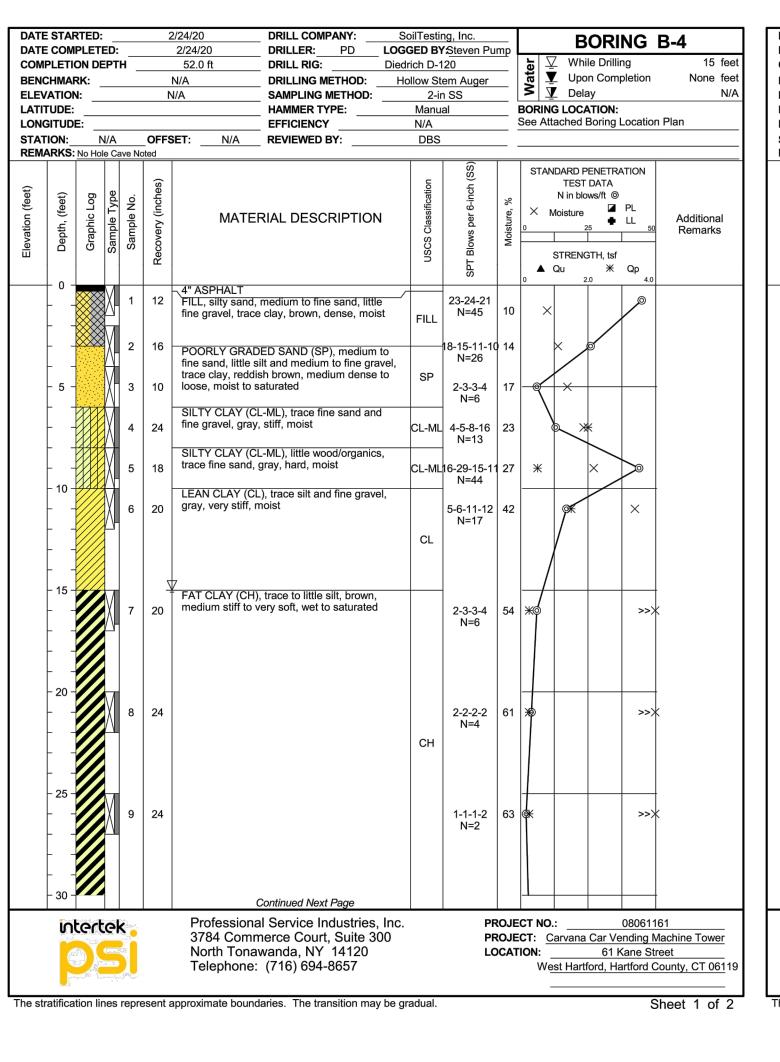
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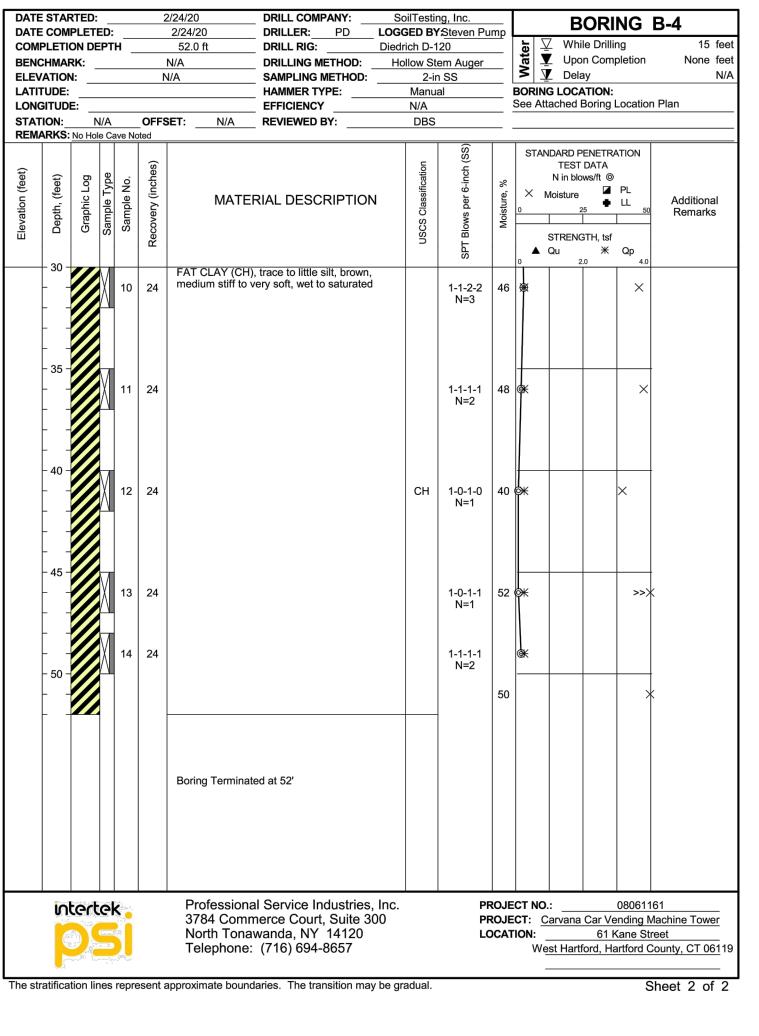
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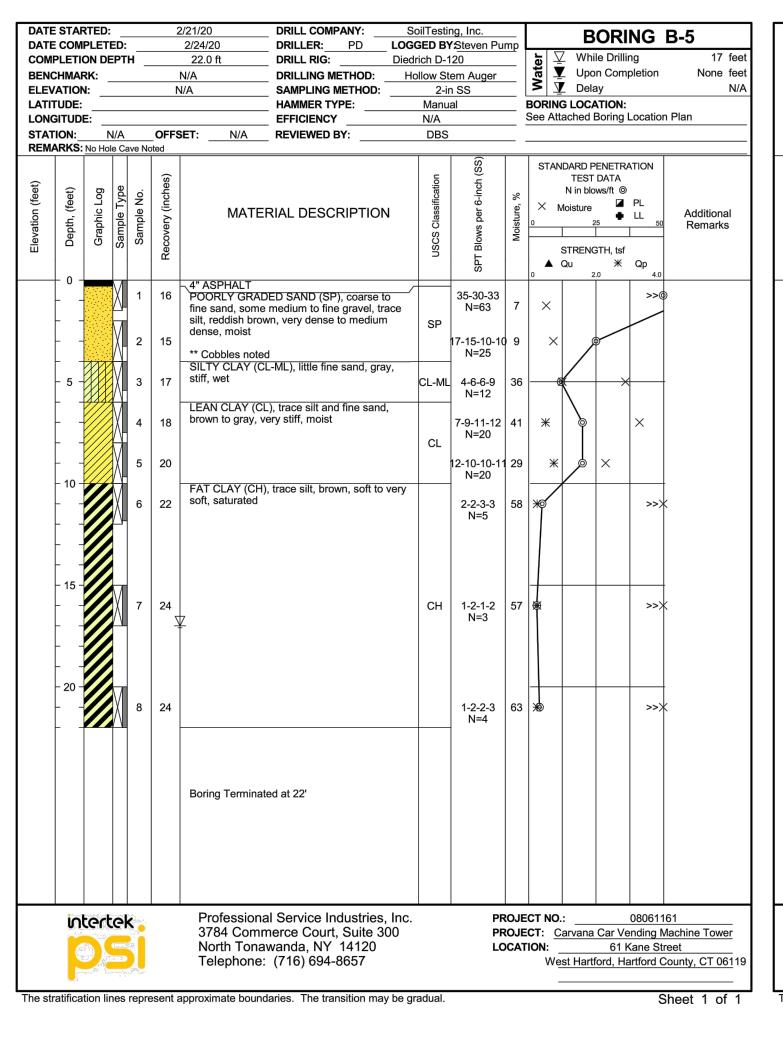
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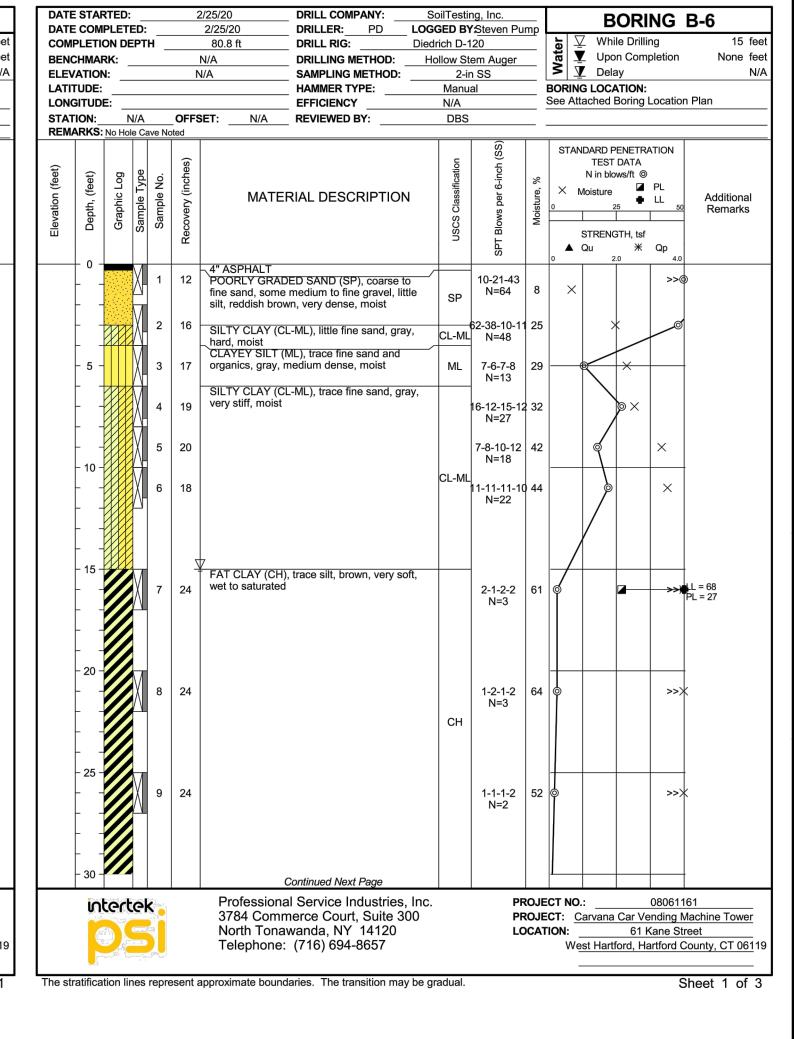
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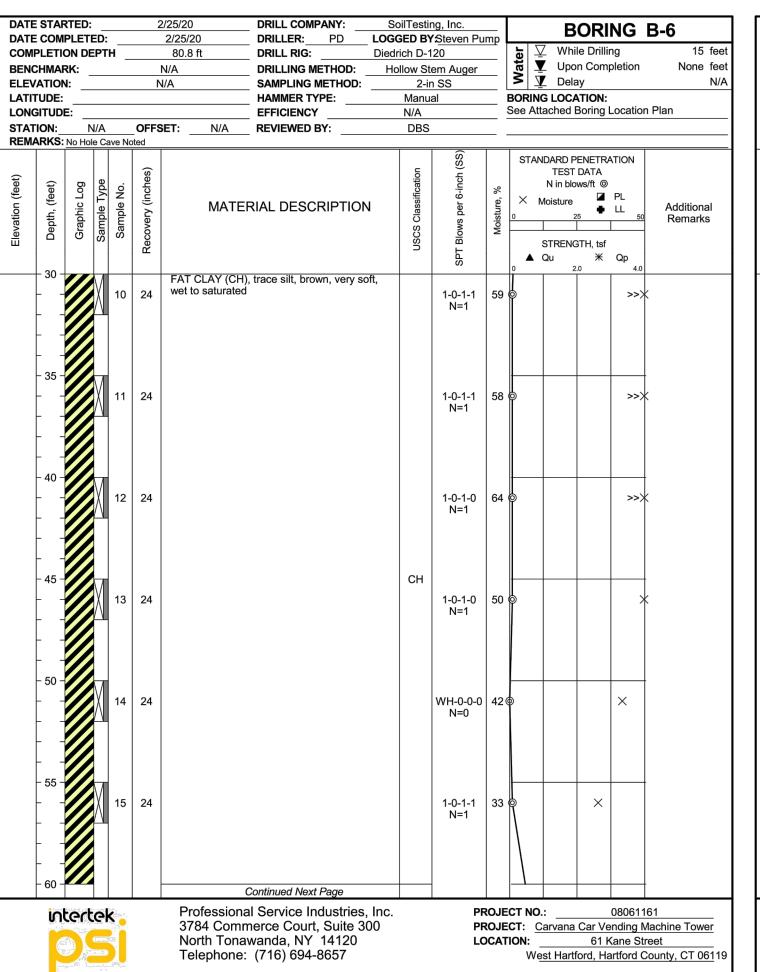
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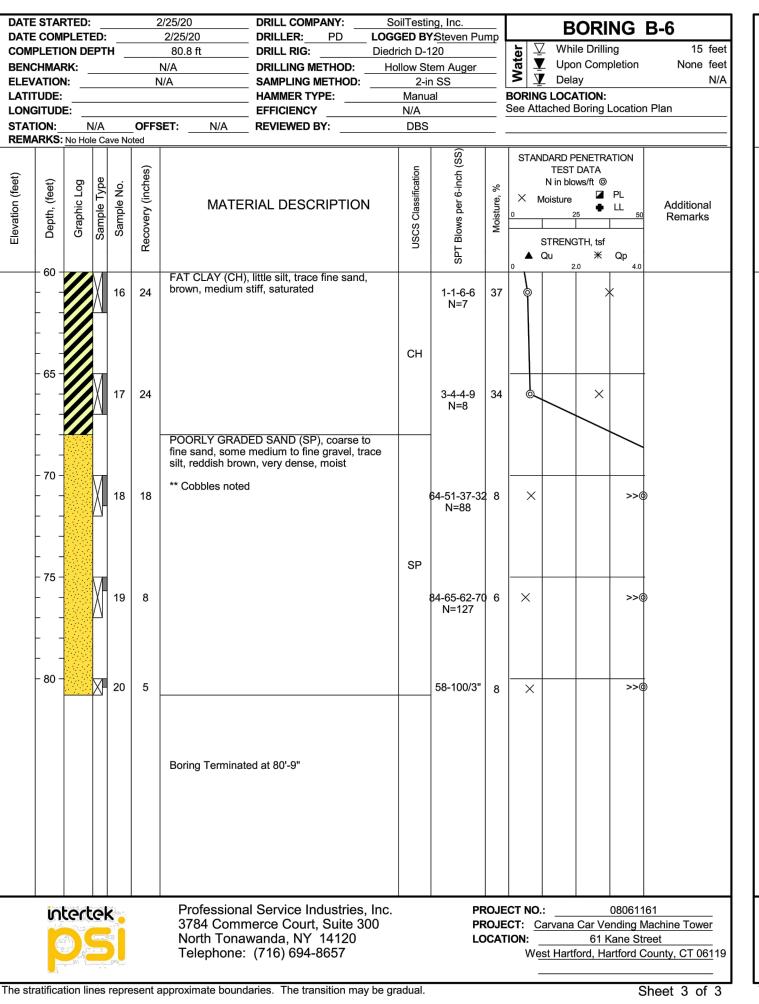


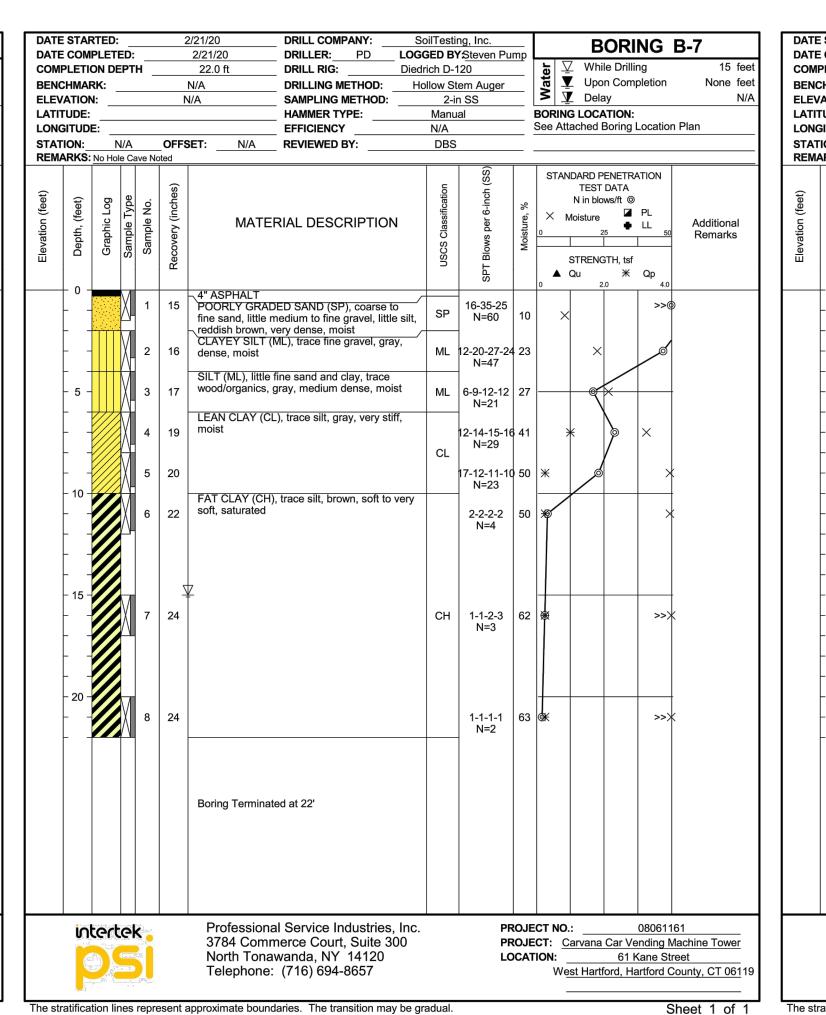


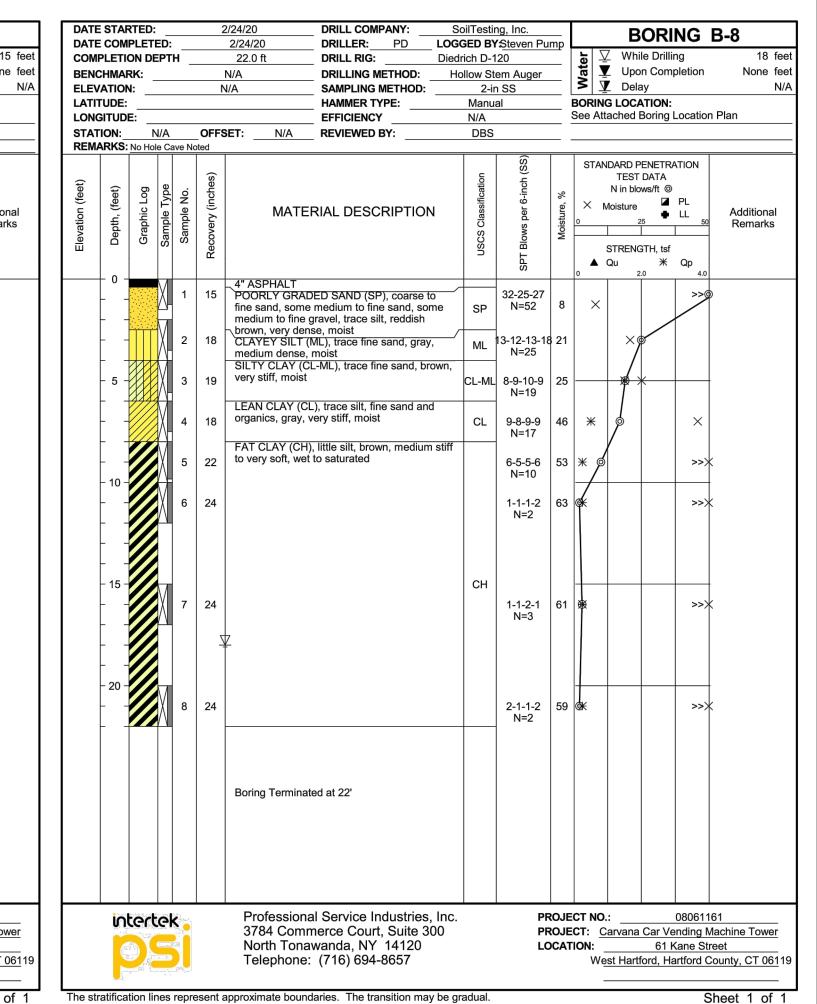


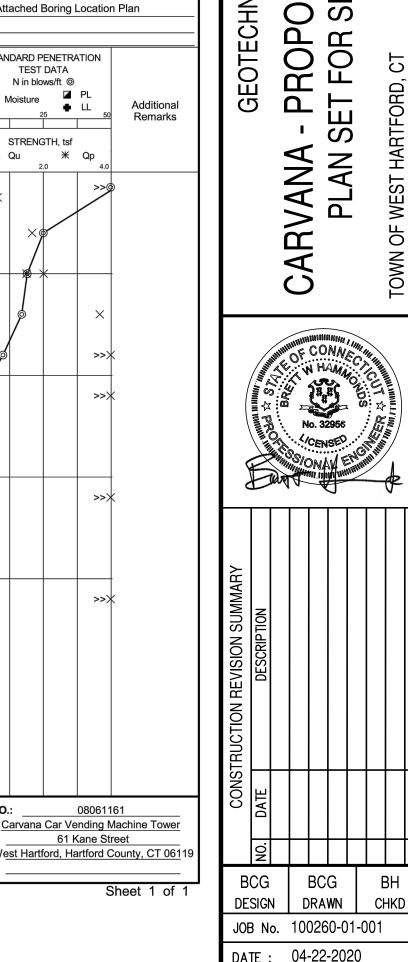












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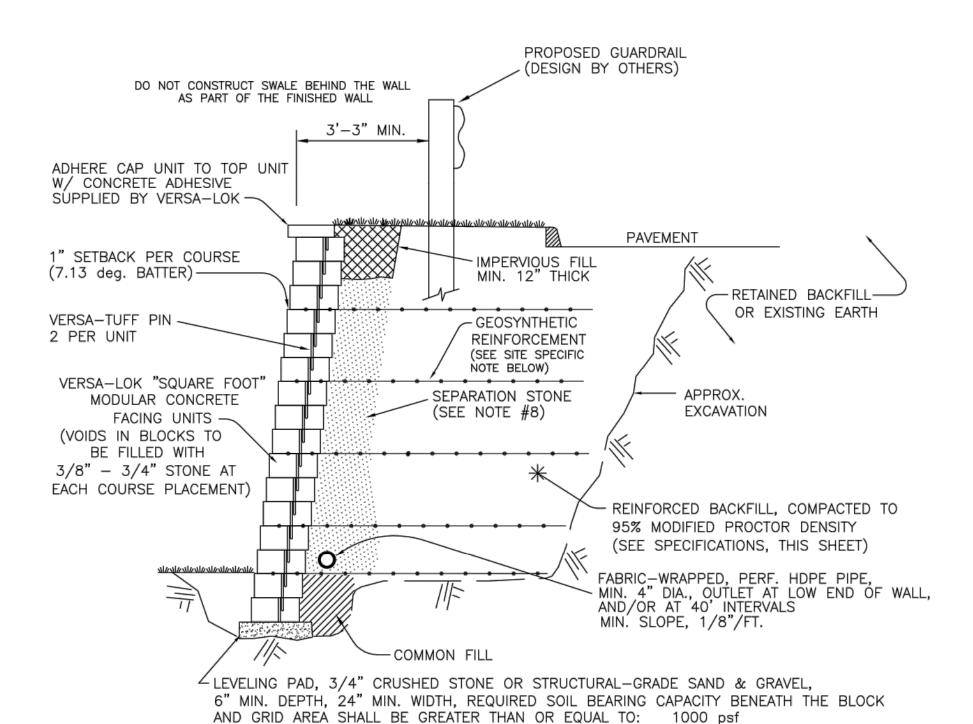
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The stratification lines represent approximate boundaries. The transition may be gradual

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WALL PARTS SECTION - REINFORCED (WALL PARTS DETAIL ONLY - SEE WALL FACE DRAWINGS FOR GRID PLACEMENT INFORMATION)

MODULAR CONCRETE UNIT RETAINING WALL SCALE: NONE

> SITE SPECIFIC NOTE: THE WALL HEIGHTS AT THIS SITE VARY AND ARE SHOWN ON THE WALL FACE DRAWING ON SHEET 2 OF 2. THE GEOGRID SHALL BE STRATAGRID PRODUCTS AS DETAILED ON THE WALL FACE DETAIL DRAWINGS. THE CUT LENGTHS OF THE GEOGRID LAYERS, AND THE PLACEMENT ELEVATIONS OF THE GEOGRID LAYERS ARE SHOWN ON THE WALL FACE DETAIL DRAWINGS. THE GEOGRID SHALL PROVIDE 100% COVERAGE. THE CONTRACTOR SHOULD CONTACT THE DESIGN ENGINEER WITH ANY QUESTIONS.

REINFORCED BACKFILL GENERAL REQUIREMENTS SIEVE SIZE % PASSING 50-85% 40-75% 8-28% 0-10%

NOTE: THE DESIGN ENGINEER MUST BE MADE AWARE WHENEVER THE PERCENT PASSING THE #200 SIEVE EXCEEDS 10%. GROUNDWATER CONTROL METHODS MAY BE REQUIRED.

GENERAL F	REQUIREMENTS
SIEVE SIZE	% PASSING
3" #4 #40 #100 #200	100% 80-100% 50-90% 40-80% 30-80%
II .	ACCEPTABLE ALTERNATE ALONG THE TOP OF THE

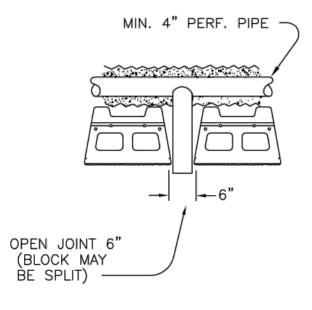
IMPERVIOUS MATERIAL

DESIGN ASSUMPTION	<u>S</u>
SOIL SOIL UNIT W	/EIGHT Φ
REINFORCED BACKFILL 128	34
RETAINED EARTH 125	32
FOUNDATION SOIL 125	32
APPLIED SURCHARGE LOADING =	250 psf
SEISMIC ACCELERATION = 0.14	
SLOPE AT WALL BASE	

MINIMUM FACTORS	OF SAFETY
OVERTURNING	2.0
SLIDING	1.5
GEOGRID PULLOUT	1.5
BEARING CAPACITY	2.0

GENERAL NOTES:

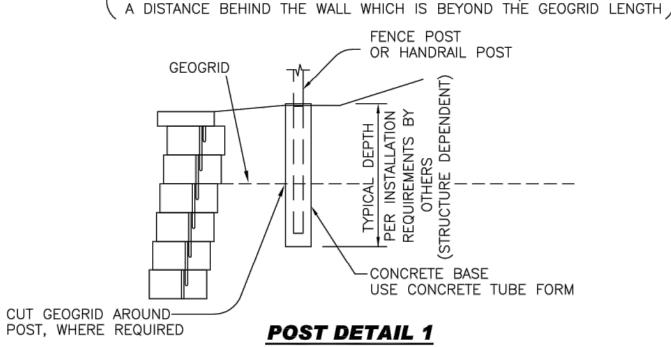
- 1. STRIP ALL VEGETATION, ORGANIC SOILS AND UNSUITABLE FILL SOILS FROM THE WALL AND GRID ALIGNMENT AREA.
- 2. BENCH CUT ALL EXCAVATED SLOPES.
- 3. DO NOT OVER EXCAVATE UNLESS DIRECTED TO DO SO BY THE OWNER'S SITE REPRESENTATIVE IN ORDER TO REMOVE UNSUITABLE SOIL. IF OVEREXCAVATING IN ORDER TO IMPROVE BEARING CAPACITY, THE EXCAVATION SHALL EXTEND AT 1H:1V (FROM THE WALL BASE UNIT) IN FRONT OF THE WALL FACE AND AT LEAST AS FAR BEHIND THE WALL AS THE LONGEST GEOGRID LENGTH.
- 4. THE OWNER'S SITE REPRESENTATIVE SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
- 5. LEVELING PAD SHALL CONSIST OF COMPACTED, STRUCTURAL-GRADE SAND & GRAVEL (OR 3/4" CRUSHED STONE). MINIMUM 6" DEPTH. AN OPTION IS TO PLACE A THIN PAD (MAX. 3" THICK) OF LEAN CONCRETE, UNREINFORCED, TO USE AS A BASE LEVELING PAD.
- 6. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE AS INDICATED ON THE WALL FACE DRAWING.
- 7. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS, ESPECIALLY WITH REGARDS TO LEVELING OF BLOCKS AND BASE.
- 8. SEPARATION STONE 12" THICK SHALL BE INSTALLED BEHIND THE WALL. THIS MATERIAL SHALL BE CLEAN (LESS THAN 10% FINES), STONE WITH SIZES NOT TO EXCEED 3/4". FOR WALL SECTIONS TALLER THAN 18 FEET (TOTAL HEIGHT), THE LOWER 25% (APPROX.) OF WALL SHALL UTILIZE 18" OF STONE DEPTH BEHIND THE WALL.
- 9. WHERE PERFORATED HDPE DRAINS ARE USED, PROVIDE OUTLETS AT LOW SPOTS ALONG THE WALL AND/OR AT 40' INTERVALS, OR TIE TO A CLOSED DRAINAGE SYSTEM. (ALTERNATE OUTLET METHODS MAY BE APPROVED BY THE DESIGN ENGINEER.)
- 10. BACKFILL AND COMPACT THE FILL MATERIAL BEHIND THE WALL AS THE WALL IS INSTALLED.
- 11. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE OWNER'S SITE REPRESENTATIVE.
- 12. COMPACTION SHALL BE TO 95% OF MAXIMUM MODIFIED PROCTOR (ASTM D-1557) OF THE FILL MATERIAL.
- 13. PULL GEOGRID TIGHT PRIOR TO BACKFILLING.
- 14. PROVIDE LATERAL DRAINAGE SWALES TO DIRECT FLOWS AROUND THE ENDS OF THE WALL AND AWAY FROM THE WALL DURING CONSTRUCTION. DO NOT CONSTRUCT SWALE BEHIND WALLS AS PART OF FINISHED CONSTRUCTION. GRADE TO ALLOW WATER TO FLOW OVER WALL FACE (OR TO A POINT MORE THAN 10 FEET BEYOND THE LONGEST GEOGRID LENGTH).
- 15. TURF, OR SOME ACCEPTABLE FORM OF SOIL EROSION PROTECTION, SHOULD BE ESTABLISHED AT THE TOP OF THE WALL (WHERE REQUIRED) BY THE LANDSCAPE CONTRACTOR AS SOON AS THE WALL IS COMPLETED.
- 16. FINAL WALL ALIGNMENT SHALL BE LOCATED IN THE FIELD BY THE OWNER'S SITE REPRESENTATIVE.
- 17. SEE NOTE 5, SHEET 2 OF THIS SET FOR GUARDRAIL/FENCE POST INSTALLATION GUIDELINES.
- 18. WHERE CATCH BASINS ARE PLACED IN CLOSE PROXIMITY TO THE WALL, THE CONTRACTOR SHOULD CONSIDER THE USE OF ECCENTRIC CONES IN ORDER TO MINIMIZE THE POSSIBLE IMPACT ON THE GEOGRID LAYERS IN THE WALL.
- 19. RECOMMENDED COMPACTION EQUIPMENT WITHIN 15 FEET OF THE BACK OF THE WALL IS AS FOLLOWS: 0 - 4 FEET HAND TAMP OR VIBRATORY PLATE COMPACTOR 4 - 15 FEET NOTHING LARGER THAN TWO-DRUM, WALK-BEHIND VIBRATORY ROLLER (LARGER ROLLERS CAN BE USED STATICALLY, PROVIDED LIFT SIZE DOES NOT COMPROMISE ACHIEVEMENT OF NECESSARY COMPACTION RATES.)
- 20. THESE WALLS HAVE BEEN DESIGNED WITH CONSIDERATION OF SEISMIC LOADINGS.
- IF CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT THE DESIGN ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.



DRAIN DETAIL - TYPICAL

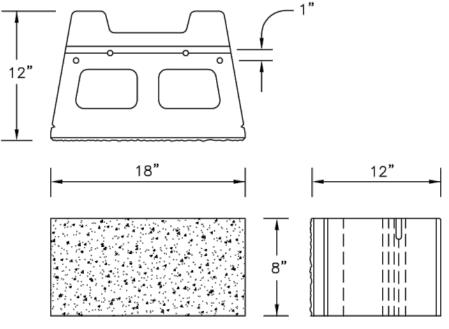
(NOT TO SCALE)

THE PREFERED ALTERNATIVE IS TO MOVE THE POSTS/RAILS TO



TYPICAL HANDRAIL, FENCE OR GUARDRAIL POST (WHERE REQUIRED) (NOT TO SCALE)

NOTE: FORCING SQUARE-EDGED POSTS THROUGH GEOGRID LAYERS MAY JEOPARDIZE THE INTEGRITY OF THE WALL SYSTEM. SEE NOTE 5, SHEET 2 OF THIS SET, FOR POST INSTALLATION GUIDELINES.



GENERAL NOTES FOR CAPPING:

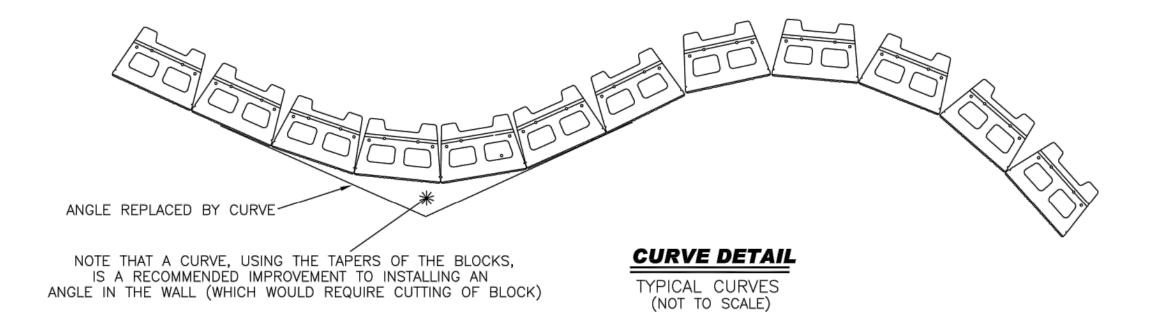
- 1. CAPS SHALL BE PLACED AS REQUIRED BY CONTRACT. . CAPS SHALL BE ADHERED TO WALL USING CONCRETE ADHESIVE SUPPLIED BY VERSA—LOK.
- . WHEN CUTTING CAP UNIT FOR WALL END, DO NOT USE A CAP SECTION LESS THAN 6" WIDE.
- 4. CAPS MAY BE PLACED FLUSH OR WITH A 1/2" TO 3/4" OVERHANG ON TOP OF WALL. 5. WALL CAPPING WILL REQUIRE THE USE OF TYPE A AND TYPE B UNITS.

TYPICAL UNIT

UNIT DIMENSIONS (NOT TO SCALE)

GRID OVERLAP AT CORNERS/CURVES: AT OUTSIDE CORNERS/CURVES WHERE GRID WILL OVERLAP, THE INSTALLER SHALL PLACE 2"-3" OF FILL MATERIAL BETWEEN THE LAYERS OF OVERLAPPING GEOGRID. GRID-ON-GRID CONTACT SHALL BE MINIMIZED. MAX. SIZE PARTICLES BETWEEN THE GRID SHALL BE 2".

COMPACTION NOTE: WHERE THE RETAINING WALL PASSES OVER ANY UTILITY LINES, COMPACTION OF THE SOIL WITHIN THE UTILITY TRENCH IS CRITICAL IN ORDER TO PREVENT SETTLEMENT OF THE WALL. COMPACTION OF ALL FILL MATERIAL IN UTILITY TRENCHES WHICH PASS UNDER THIS RETAINING WALL MUST BE AT LEAST 95% OF THE MAXIMUM DENSITY OF THE FILL MATERIAL.







RETAINING WALL SYSTEMS NOTE: THIS DRAWING WAS PREPARED FOR USE WITH VERSA-LOK (TM) "SQUARE FOOT" RETAINING WALL SYSTEMS.

CIVIL ENGINEERING CONSULTANTS SITE DESIGN SPECIALISTS 2 DARTMOUTH STREET CLAREMONT, NEW HAMPSHIRE TEL: (603) 543-5454 Est. 1990 Available On The Web At www.SVEngineering.com

BOWMAN CONSULTING GROUP, LTD.

3951 WESTERRE PARKWAY, SUITE 150, RICHMOND, VA 23233 PROJECT: CARVANA - WEST HARTFORD

61 KANE STREET, WEST HARTFORD, CT SHEET TITLE: RETAINING WALL DESIGN SHEET 1

MARCH 4, 2020 AS SHOWN 20-124

WALL FACE DRAWING

SCALE: 1" = 10'

NOTE: ALL WALLS WERE DESIGNED USING GRADING INFORMATION PROVIDED BY OTHERS.

IF THE FIELD CONDITIONS INDICATE THE GRADE AT THE BASE AND/OR TOP OF THE WALL

TO BE DIFFERENT FROM THAT SHOWN ON THESE PLANS, THE DESIGN ENGINEER SHALL

BE CONTACTED TO VERIFY CHANGES TO THE WALL BASE COURSE AND/OR TOP OF WALL ELEVATION.

MOTE

1. THE GEOGRID CUT LENGTHS SHOWN ARE THE MINIMUM LENGTHS TO BE USED.
THE CONTRACTOR MAY USE LONGER LENGTHS WHERE THEY MAY EASE INSTALLATION.

2. CARE SHOULD BE TAKEN TO REMOVE ALL ORGANIC MATERIAL FROM THE BASE EXCAVATION FOR THE RETAINING WALL.

- 3. GEOGRID CUT LENGTHS ARE MEASURED FROM THE FRONT FACE OF THE RETAINING WALL. ALL GEOGRID IS TO BE PLACED PERPENDICULAR TO THE WALL FACE, i.e. THE GRID ROLL IS PLACED ON THE WALL, ROLLED OUT BEHIND THE WALL, AND CUT TO LENGTH.
- 4. ENDS OF THE RETAINING WALLS SHALL BE BLENDED INTO THE PROPOSED/EXISTING GRADE IN A MANNER SATISFACTORY TO THE OWNER'S SITE REPRESENTATIVE. AT THE ENDS OF A WALL WHERE BLENDING TAKES PLACE, THE ISSUE IS NOT A STRUCTURAL FACTOR BUT AN AESTHETIC FACTOR AND THE OWNER'S SITE REPRESENTATIVE IS QUALIFIED TO MAKE THIS JUDGEMENT.

5. THE PREFERED LOCATION FOR GUARDRAIL/FENCE INSTALLATION IS BEYOND THE LENGTH OF THE GEOGRID. WHERE THIS CANNOT BE ACCOMPLISHED, THE FOLLOWING ALTERNATIVES ARE AVAILABLE FOR POST INSTALLATION:

ALTERNATIVE #1: FOR FENCE POSTS LOCATED LESS THAN 3 FEET FROM THE REAR OF THE WALL BLOCK USE THE "SLEEVE—IT" FENCE POST INSTALLATION SYSTEM.
THIS PROCEDURE INVOLVES THE USE OF THE "SLEEVE—IT" POST RISER AND SUPPORT STRUTS AND IS INSTALLED WHEN THE WALL IS APPROX. 24" BELOW ITS FINISHED GRADE.

ALTERNATIVE #2:

- A. FOR GUARDRAILS/FENCES INSTALLED WHERE GEOGRID IS LESS THAN 19" FROM THE SURFACE, THE SOIL ABOVE THE GEOGRID IS TO BE EXCAVATED AND THE GEOGRID HAND—CUT. THE HOLE CUT IN THE GRID IS TO BE JUST LARGE ENOUGH FOR THE POST INSTALLATION. IF THE POST EXTENDS THROUGH FURTHER GRID LAYERS, IT MAY BE DRIVEN THROUGH ADDITIONAL LAYERS, PROVIDED THE DRIVEN END IS TAPERED IN SOME FORM TO PROVIDE A POINT. SQUARE—EDGE POSTS SHALL NOT BE DRIVEN THROUGH GEOGRID LAYERS. DRIVING WOOD POSTS IN CLOSE PROXIMITY TO THE REAR OF THE WALL MAY PUSH THE WALL FACE OUTWARD DUE TO DISPLACED SOIL;
- B. FOR GUARDRAILS/FENCES INSTALLED WHERE GEOGRID IS MORE THAN 19" FROM THE SURFACE, THE POST MAY BE DRIVEN THROUGH THE GRID LAYER(S), PROVIDED THE DRIVEN END IS TAPERED IN SOME FORM TO PROVIDE A POINT. SQUARE—EDGE POSTS SHALL NOT BE DRIVEN THROUGH GEOGRID LAYERS. DRIVING WOOD POSTS IN CLOSE PROXIMITY TO THE REAR OF THE WALL MAY PUSH THE WALL FACE OUTWARD DUE TO DISPLACED SOIL;

AUGERING OF POST HOLES IS ACCEPTABLE, PROVIDED GEOGRID LAYERS WITHIN 19" OF THE SURFACE ARE HAND—CUT PRIOR TO AUGERING THE HOLE.

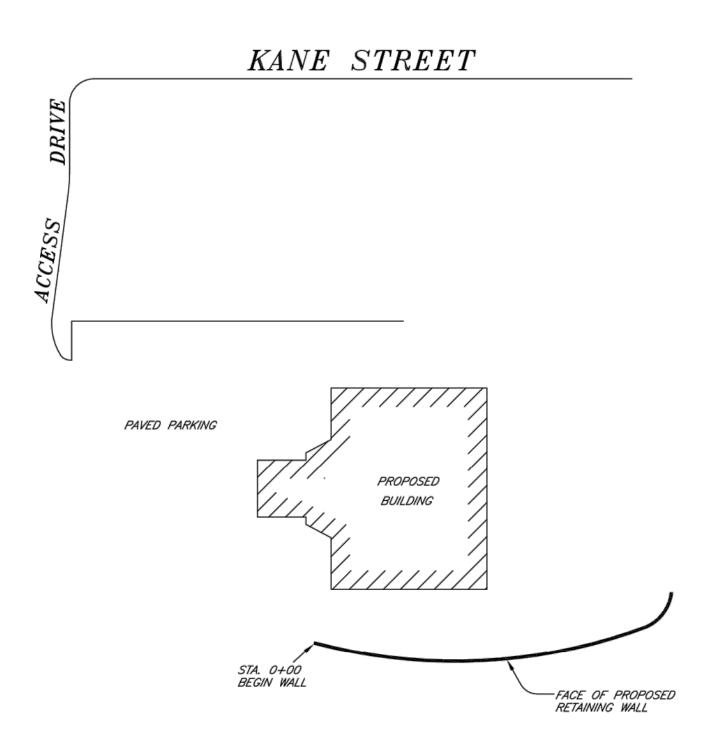
IF THE POSTS ARE TO BE SLEEVED AND SET IN CONCRETE, ALL GRID LAYERS MUST BE HAND CUT, WITH THE CUT HOLES JUST LARGE ENOUGH TO PROVIDE ROOM FOR THE SLEEVE. USE OF A HAND-OPERATED POST-HOLE SHOVEL TO CUT THROUGH GEOGRID IS ACCEPTABLE FOR GRID LAYERS DEEPER THAN 15" FROM THE SURFACE.

THE PREFERRED MINIMUM DISTANCE FROM THE FACE OF THE WALL TO A GUARDRAIL POST IS 3'-3", UTILIZING A STANDARD POST DEPTH. IF THE GUARDRAIL MUST BE CLOSER THAN 3'-3" FROM THE FACE OF THE WALL, SIGNIFICANTLY DEEPER POST DEPTHS AND/OR ALTERNATIVE METHODS OF INSTALLATION MAY BE REQUIRED.

EVALUATION OF THE STRUCTURAL CAPABILITIES OF ANY GUARDRAIL OR FENCE SYSTEM INSTALLED AT THIS SITE WAS NOT PART OF THIS DESIGN.

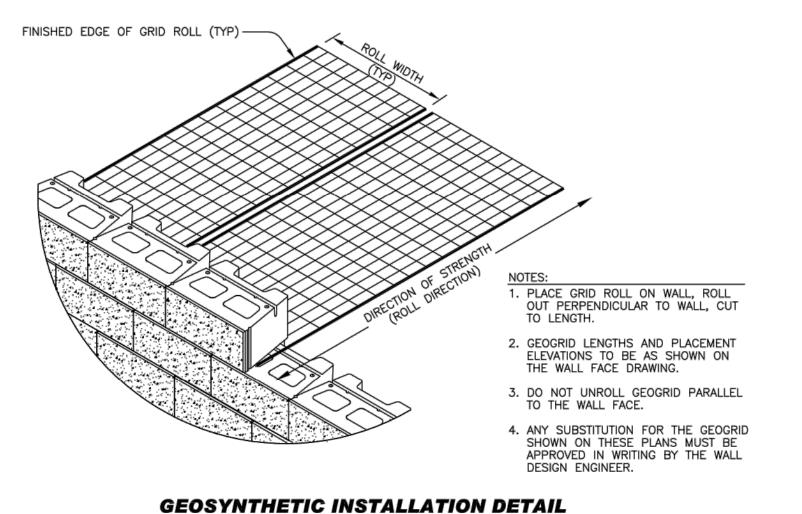
- 6. WHERE POSSIBLE, CATCH BASINS/MANHOLES THAT ARE PLACED IN CLOSE PROXIMITY TO THE PROPOSED RETAINING WALL SHOULD USE ECCENTRIC CONES TO HELP DISTANCE THE STRUCTURE FROM THE GEOGRID AND RETAINING WALL.
- 7. ANY PLANTINGS SET BEHIND THE WALLS SHALL BE PLACED WITHOUT CUTTING OF THE GEOGRID REINFORCEMENT LAYERS. THIS CAN BE ACCOMPLISHED BY SETTING PLANTINGS ABOVE THE GEOGRID LAYERS.
- 8. ANGLES IN THE RETAINING WALL REQUIRE CUSTOM CUTTING OF THE BLOCKS. THE RECOMMENDED SOLUTION IS TO INSTALL A CURVE, USING THE TAPERS OF THE WALL BLOCKS, TO REPLICATE THE ANGLE. CUTTING A BLOCK TO "SHAPE" AN ANGLE POINT IS NOT AS STABILE AS THE USE OF THE CURVE RADIUS. FURTHER, USE OF THE CURVE RADIUS REQUIRES LESS CUTTING OF WALL BLOCKS, ALLOWING FOR ADDED STABILITY.
- 9. FOR PIPES (> 8") WHICH OUTLET THROUGH THE VERSA—LOK WALL, THE SPACE NEEDED TO SQUARE—OFF THE PIPE TO THE WALL MAY BE FILLED WITH NON—SHRINK MORTAR, BLOCKS CUT TO SIZE OR OTHER APPROVED SEALANT METHOD TO PREVENT MIGRATION OF FINES THROUGH GAPS AROUND THE PIPE. FILTER FABRIC SHALL BE PLACED AROUND THE PIPE AS A SECONDARY MEASURE TO PREVENT MIGRATION.

10. ANY UTILITY LINE HAVING A DIAMETER GREATER THAN 4" AND PASSING UNDER A RETAINING WALL MUST HAVE A MINIMUM CLEARANCE OF 24" BETWEEN THE WALL BASE COURSE AND THE CROWN OF THE UTILITY LINE. WHERE THIS MINIMUM CLEARANCE CANNOT BE ACHIEVED, A GRANITE OR CONCRETE HEADER SHALL BE INSTALLED OVER THE PIPE. THIS HEADER SHALL EXTEND AT LEAST 24" BEYOND BOTH SIDES OF THE PIPE, RUNNING ALONG THE WALL BASE. THE HEADER SHALL BE AT LEAST 12" DEEP (TO MATCH THE WALL DEPTH) AND BE CENTERED BENEATH THE WALL BASE. THE HEADER SHALL BE AT LEAST 8" IN HEIGHT.



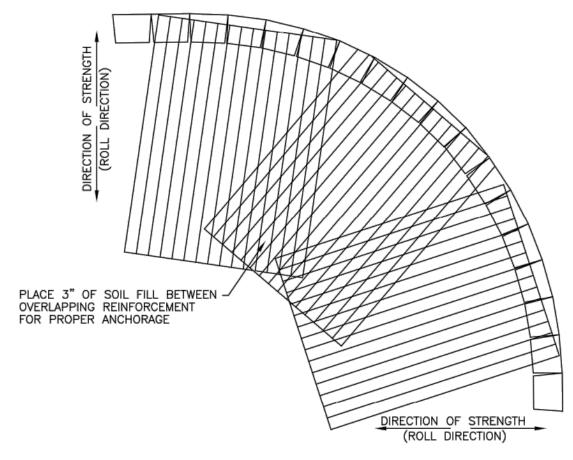
VICINITY SKETCH

(NOT TO SCALE)
SEE CONSTRUCTION DRAWINGS BY OTHERS





NOT TO SCALE



GEOSYNTHETIC PLACEMENT - CONVEX CURVE

SCALE: NONE



PROJECT:



NOTE: THIS DRAWING WAS PREPARED FOR USE WITH VERSA-LOK (TM) "SQUARE FOOT"

SOUHEGAN VALLEY ENGINEERING, LLC

CIVIL ENGINEERING CONSULTANTS

2 DARTMOUTH STREET

CLAREMONT, NEW HAMPSHIRE

O3743

TEL: (603) 543-5454

Est. 1990

Available On The Web At www.SVEngineering.com

CLIENT:

BOWMAN CONSULTING GROUP, LTD.

3951 WESTERRE PARKWAY, SUITE 150, RICHMOND, VA 23233

CARVANA - WEST HARTFORD

61 KANE STREET, WEST HARTFORD, CT

SHEET TITLE:

RETAINING WALL DESIGN SHEET 2

DATE: SCALE: MARCH 4, 2020 AS SHOWN

20-124

SRWall (Version 4) Report

Project Identification

Client

Project ID

Project Name

National Concrete Masonary Association

: SVE #20-124 : Carvana Site, Kane Street, West Hartford, CT : Bowman Consulting Group, Richmond, VA

Prepared By : R. Bragdon, PE Company : Souhegan Valley Engineering, Inc. : 2 Dartmouth Street, Claremont, NH Address : 603-543-5454 Telephone Section : Wall H=5.3'

: 0.00

: Reinforced Wall

Project File : 20124.prj Vendor Data File : 03/04/2020 00:00:00 Date and Time

Type of Structure Wall Geometry

Design Wall Height(ft) Embedment Wall Height(ft) : 0.80 Exposed Wall Design Height(ft): 4.53 Number of Segmental Wall : 8 Wall Inclination(degrees) : 7.13

Top Slope(degrees)

Uniform Distributed Surcharge

<u>Grades</u>

Live Load Surcharge(Psf) : 250.00 Live Load Surcharge Setback : 2.00 Dead Load Surcharge(Psf) : 0.00

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(⊕) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil	SAND & GRAVEL	N/A	34.00	128.00
Retained Soil	SAND & GRAVEL	N/A	32.00	125.00
Leveling Pad Soil	STONE	N/A	40.00	125.00
Foundation Soil	SAND & GRAVEL	0.00	32.00	125.00

Segmental Unit Data

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Segmental Unit Name	: Square Foot Bl
Cap Height (Inches)	: 3.62
Unit Height (Hu)(Inches)	: 8.00
Unit Width (Wu)(Inches)	: 12.00
Unit Length (Inches)	: 18.00
Setback (Inches)	: 1.00
Weight (Infilled)(lb)	: 115.00
Unit Weight (Infilled)(pcf)	: 115.00

Geosynthetic Reinforcement Type and Number

Center of Gravity(Inches) : 6.00

Supplier	Product Name	Number
	Stratagrid SG150	0
	Stratagrid SG200	2
	Stratagrid SG350	0
	Stratagrid SG500	0
	Stratagrid SG550	0
	Stratagrid SG600	0

Geosynthetic Properties

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Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	С
Stratagrid SG150	1875.00	1.55	1.10	1.40	785.50	0.90	0.9
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.9
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.9
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.9
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.9
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.9

Unit-Unit Interface Properties

Minimum Shear	Shear Friction	Maximum Shear
Capacity(lb/ft)	Angle	Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

	Minimum	1st Inflection	n Point (lb/ft)	2nd Inflection	n Point (lb/ft)
Geosynthetic Product	Conn. Capacity (lb/ft)	Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity (lb/ft)
Stratagrid SG150	923.00	360.00	967.00	1889.00	1155.00
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG150	1100.00	35.00	5000.00
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

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Vertical Components of Earth Pressures Used : No

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka) Reinforcement Soil(Static)(Kah Horizontal Component Internal Modified Back Slope(Bint)	: 0.207) : 0.199 : 0.000
Orientation of failure plane from horizontal(degrees) fo Internal Stability	: 55.631
Retained Soil(Static)(Ka)	: 0.226
Retained Soil(Static)(Kah Horizontal Component)	: 0.205
External Modified Back Slope(Bext)	: 0.000
Orientation of failure plane from horizontal(degrees) fo External Stability	: 53.26 6

Result of External Stability Static Analysis

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	Calculated	Design Criteria
FOS Sliding	4.02	> 1.50
FOS Overturning	9.80	> 2.00
FOS Bearing Capacity	14.91	> 2.00
Base Reinforcement Length (L)(ft)	6.00	
Base Reinforcement Ratio (L/H)	1.12	> 0.60

Results of Internal Stability Static Analysis

	SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.10
	7	Stratagrid SG200	4.00	6.00	2.76	9.09	3.08	19.45	ок
	4	Stratagrid SG200	2.00	6.00	3.88	3.81	4.54	8.65	ок

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50	
7	4.00	Stratagrid SG200	8.23	11.15	
4	2.00	Stratagrid SG200		2.97	

National Concrete Masonary Association

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SRWall (Version 4) Report

Project Identification

: SVE #20-124 Project ID : Carvana Site, Kane Street, West Hartford, CT Project Name Owner : Bowman Consulting Group, Richmond, VA Prepared By : R. Bragdon, PE : Souhegan Valley Engineering, Inc. Company Address : 2 Dartmouth Street, Claremont, NH

: Reinforced Wall

: 603-543-5454 Telephone : Wall H=5.3', SEISMIC CHECK Section : 20124s.prj Project File Vendor Data File : 03/04/2020 00:00:00 Date and Time

Type of Structure

Seismic Analysis Details Peak Ground Acceleration(PGA: 0.14

Wall Geometry

Design Wall Height(ft) Embedment Wall Height(ft) : 0.80 Exposed Wall Design Height(ft): 4.53 Number of Segmental Wall : 8 Wall Inclination(degrees) : 7.13

Top Slope(degrees)	: 0.00

Uniform Distributed Surcharge Live Load Surcharge(Psf)

Live Load Surcharge Setback : 2.00 Dead Load Surcharge(Psf) : 0.00

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(⊅) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil	SAND & GRAVEL	N/A	34.00	128.00
Retained Soil	SAND & GRAVEL	N/A	32.00	125.00
Leveling Pad Soil	STONE	N/A	40.00	125.00
Foundation Soil	SAND & GRAVEL	0.00	32.00	125.00

Segmental Unit Data

Segmental Unit Name	: Square Foot Bl
Cap Height (Inches)	: 3.62
Unit Height (Hu)(Inches)	: 8.00
Unit Width (Wu)(Inches)	: 12.00
Unit Length (Inches)	: 18.00
Setback (Inches)	: 1.00
Weight (Infilled)(lb)	: 115.00
Unit Weight (Infilled)(pcf)	: 115.00
Center of Gravity(Inches)	: 6.00

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
	Stratagrid SG150	0
	Stratagrid SG200	2
	Stratagrid SG350	0
	Stratagrid SG500	0
	Stratagrid SG550	0
	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG150	1875.00	1.55	1.10	1.40	1217.53	0.90	0.90
Stratagrid SG200	3600.00	1.55	1.10	1.25	2618.18	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	3636.36	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	4848.48	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	6174.24	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	6893.94	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear	Shear Friction	Maximum Shear
Capacity(lb/ft)	Angle	Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

		Minimum	1st Inflection	n Point (lb/ft)	2nd Inflection Point (lb/f		
	Geosynthetic Product	Conn. Capacity (lb/ft)	Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity (lb/ft)	
	Stratagrid SG150	923.00	360.00	967.00	1889.00	1155.00	
	Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00	
	Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00	
	Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00	
	Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00	
Ī	Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00	

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG150	1100.00	35.00	5000.00
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

<u>vertical components</u>	
Vertical Components of Earth Pressures Used	: No

<u>Cofficients of Earth Pressure and Failure Plane Orientation</u>

Seismic Cofficient(K(int))	: 0.050
Seismic Cofficient(K(ext))	: 0.050
Reinforcement Soil(Static)(Ka)	: 0.207
Reinforcement Soil(Static)(Kah Horizontal Component)	: 0.199
Reinforcement Soil(Static + Dynamic)(Kae)	: 0.234
Reinforcement Soil(Static + Dynamic)(Kaeh horizontal Component)	: 0.225
Internal Modified Back Slope(Bint)	: 0.000
Orientation of failure plane from horizontal(degrees) for Internal Stability	: 55.631
Retained Soil(Static)(Ka)	: 0.226
Retained Soil(Static)(Kah Horizontal Component)	: 0.205
Retained Soil(Static + Dynamic)(Kae)	: 0.255
Retained Soil(Static + Dynamic)(Kaeh horizontal Component)	: 0.231
External Modified Back Slope(Bext)	: 0.000

Orientation of failure plane from horizontal(degrees) for : 53.266

External Stability

Result of External Stability Seismic Analysis

	Calculated	Design Criteria
FOS Sliding	5.42	> 1.10
FOS Overturning	14.40	> 1.50
FOS Bearing Capacity	19.99	> 1.50
Base Reinforcement Length (L)(ft)	6.00	
Base Reinforcement Ratio (L/H)	1.12	> 0.60

Results of Internal Stability Seismic Analysis

	Γ	I	I				Ι	r .
SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.10	FOS Pullout >=1.10	FOS Slide >=1.10	Layer Spacing (ft) >=2.00
7	Stratagrid SG200	4.00	6.00	2.76	25.47	5.57	38.21	ок
4	Stratagrid SG200	2.00	6.00	3.88	7.78	5.98	12.79	ок

Results of Facing Stability Seismic Analysis

SRW Unit #		Geosynthetic Product	FOS Crest Toppling >=1.10	FOS Connecti >=1.10
7	4.00	Stratagrid SG200	5.20	7.54
4	2.00	Stratagrid SG200		2.59

MEMO TO: Brett Hammonds – Bowman Consulting Group

FROM: Randall H. Bragdon, PE Souhegan Valley Engineering, LLC 2 Dartmouth Street, Claremont, NH 03743 Tel: (603) 543-5454

SUBJECT: Carvana Site, West Hartford, CT

SVE #20-124

DATE: March 4, 2020 one wall, Versa-lok Square Foot blocks with Stratagrid

Wall Area = 583 SF

Wall Length = 152 ft.

Strata SG 200 geogrid = 136 SY

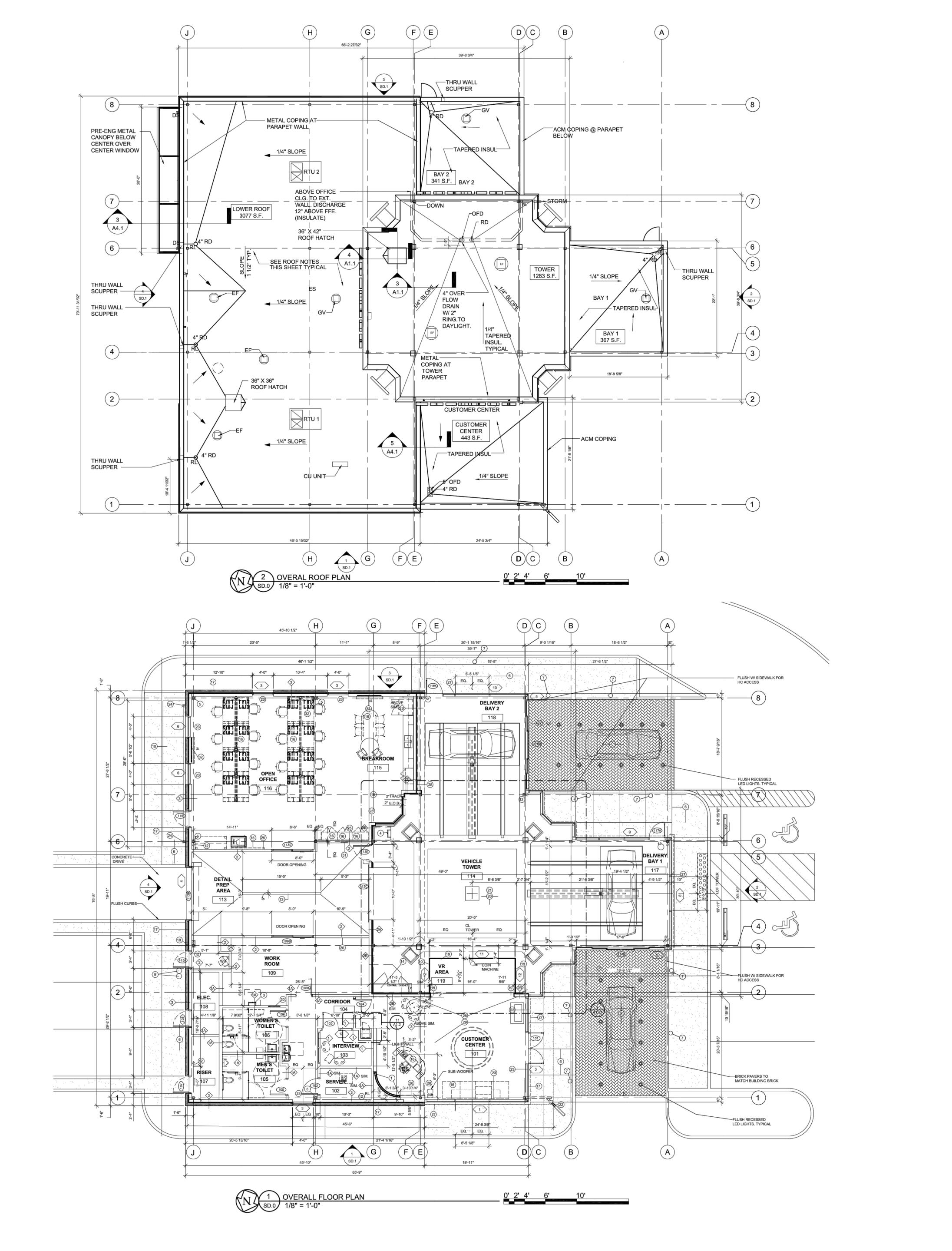
NOTE: The wall area shown above does not include cap unit areas. Caps can be determined by the block manufacturer based on the wall length and configuration.

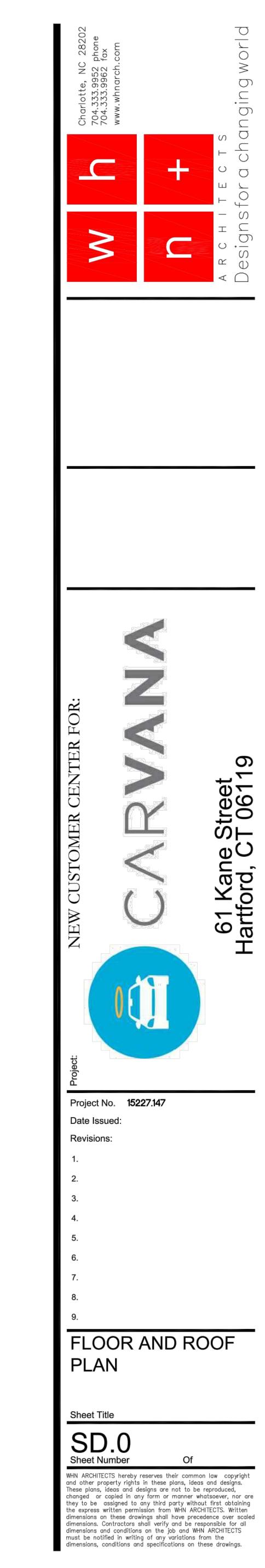
Path: C:\Users\bhammonds\Desktop\Engineering Plans\100260-01-001 WALL.dwg, Plot Created Apr 22, 2020 - 11:17am by bhammonds

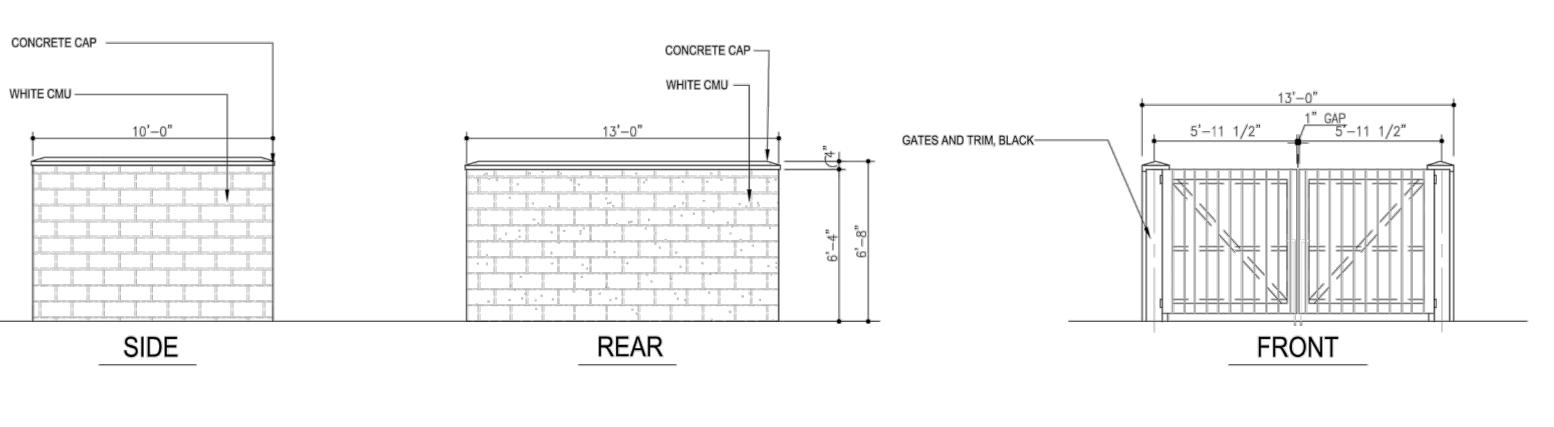
BCG DESIGN DRAWN CHKD

JOB No. 100260-01-001 DATE: 04-22-2020

SHEET R3



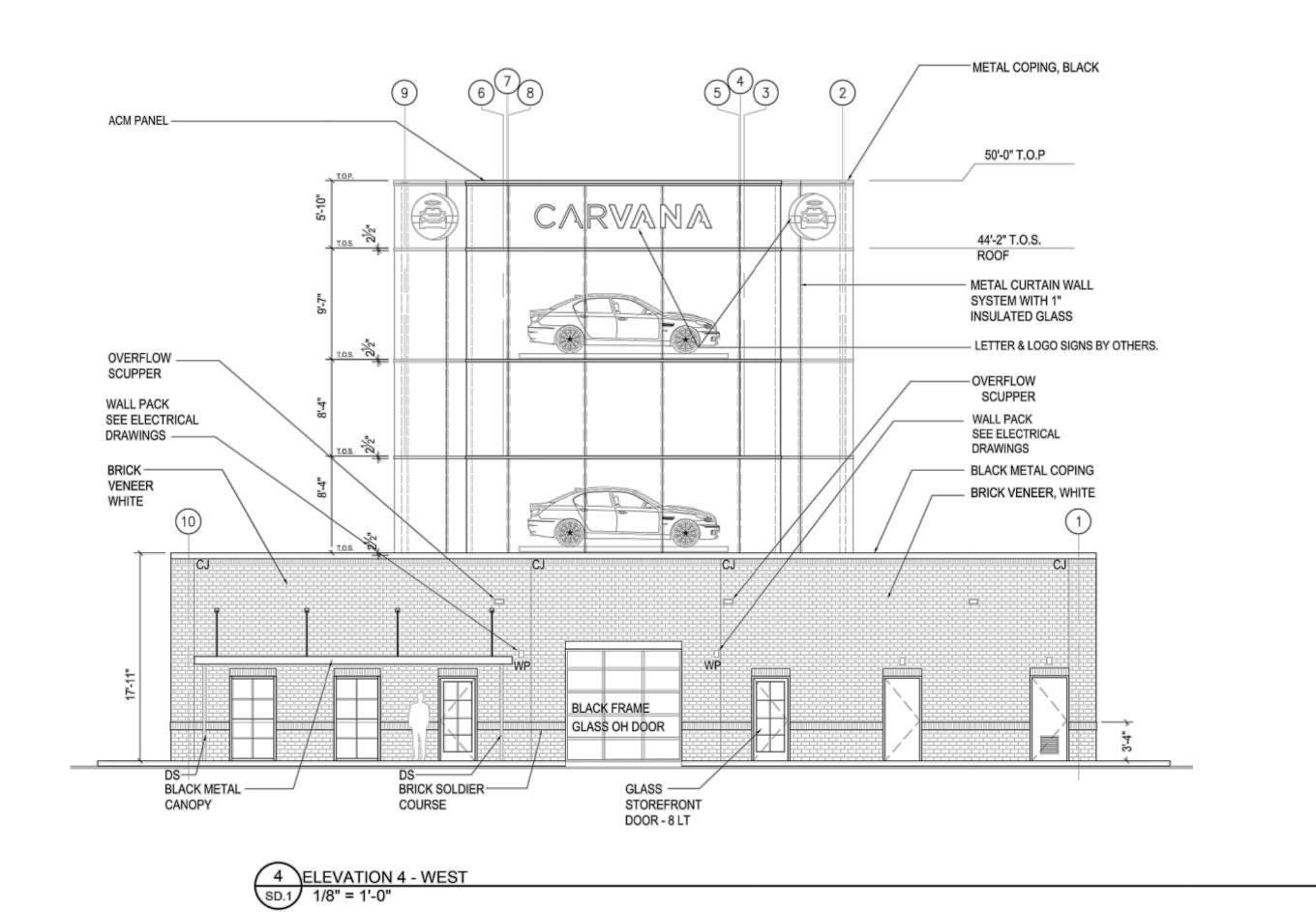


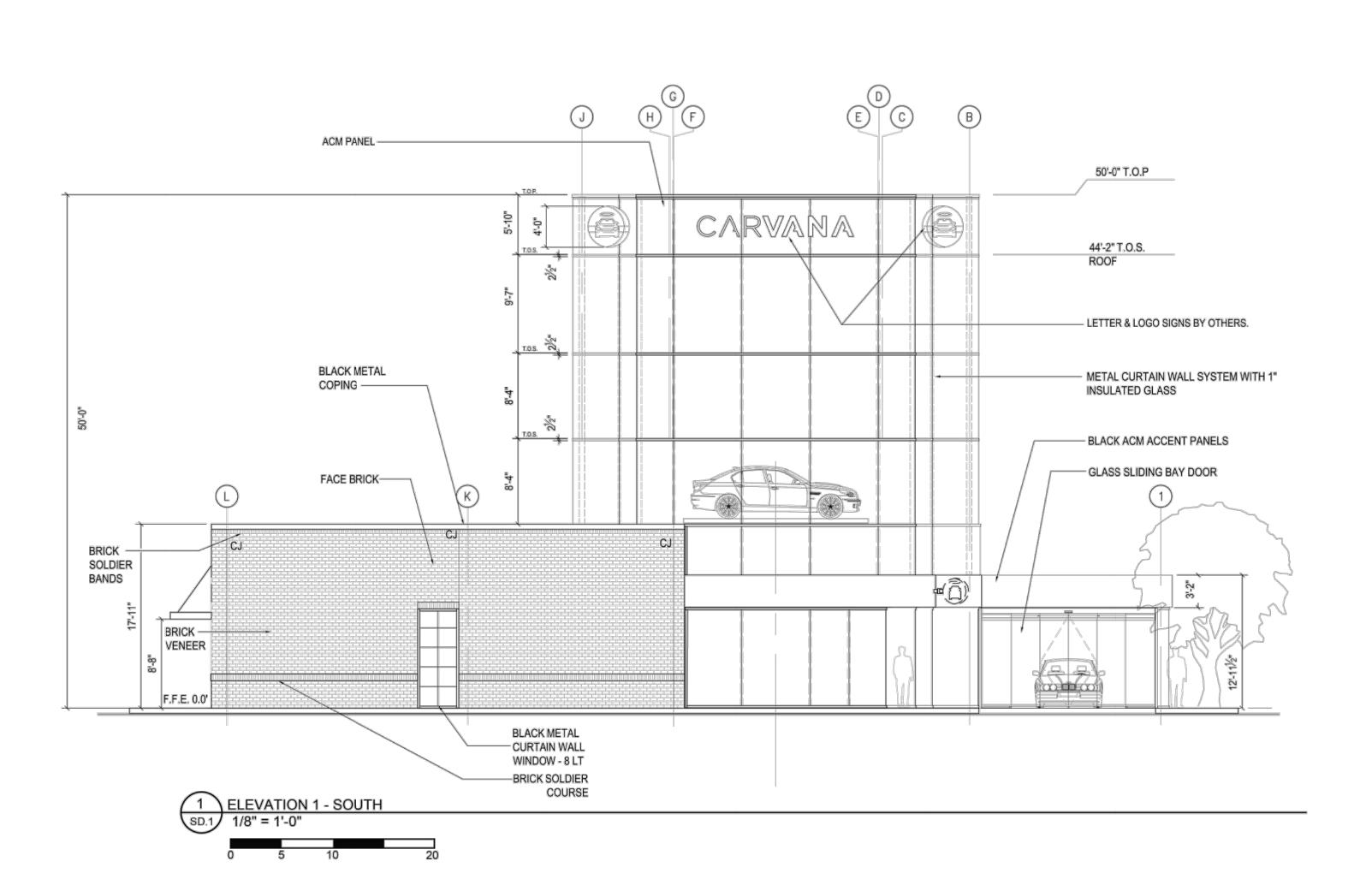




- BRICK VENEER

F.F.E. 0.0'





METAL COPING, BLACK

GLASS STOREFRONT DOOR

50'-0" T.O.P

44'-2" T.O.S. ROOF

METAL CURTAIN WALL SYSTEM

LETTER & LOGO SIGNS BY OTHERS.

BRICK SOLDIER

BRICK SOLDIER COURSE ----

BLACK CURTAIN WALL WINDOW

WITH 1" INSULATED GLASS

BLACK METAL COPING

BRICK VENEER, WHITE

ACM PANEL -

METAL CURTAIN WALL -

METAL ACM PANELS ----

3 ELEVATION 3 - NORTH SD.1 1/8" = 1'-0"

EMERGENCY LIGHT SEE ELECTRICAL

DRAWINGS -

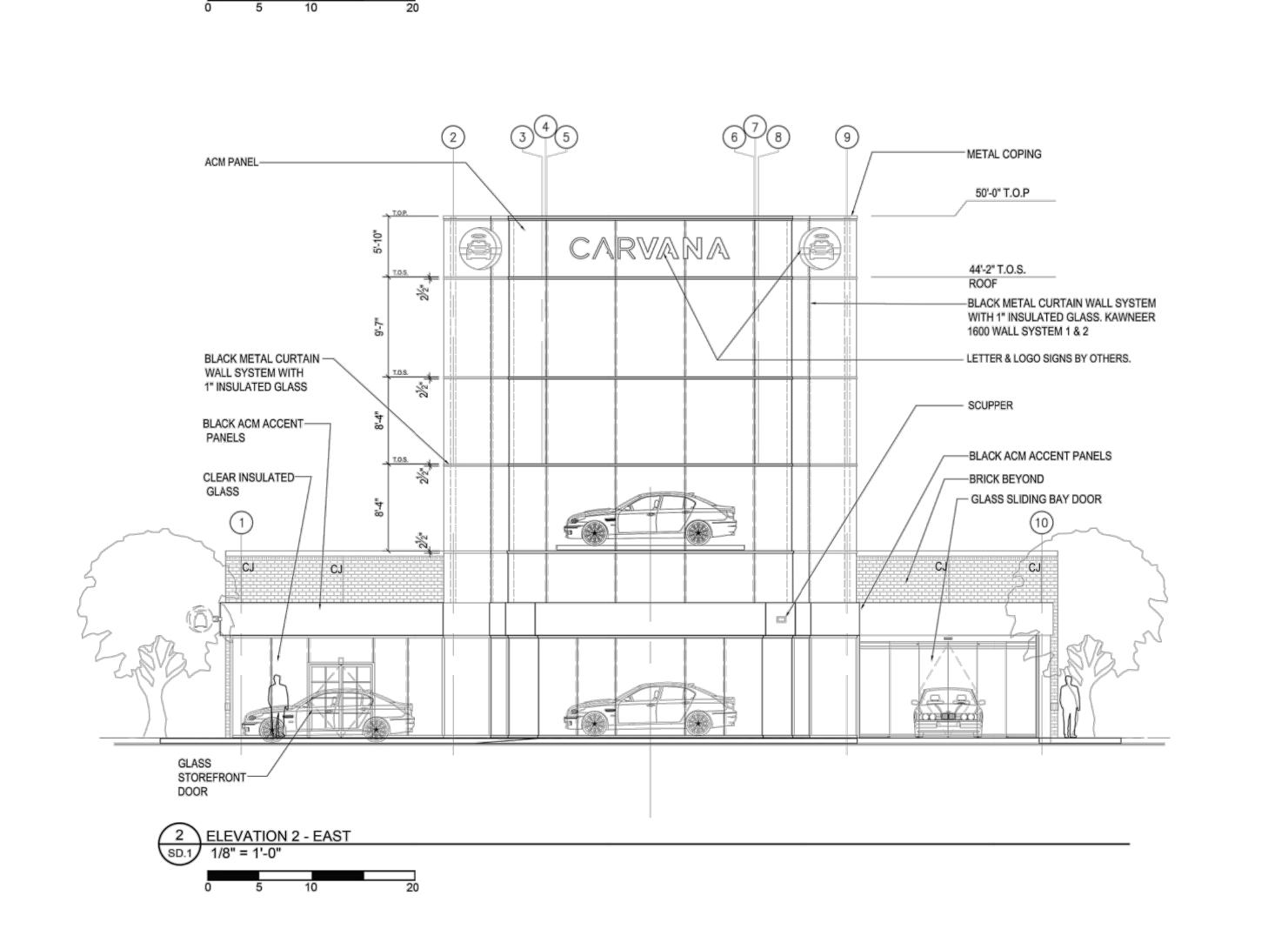
SYSTEM WITH 1"

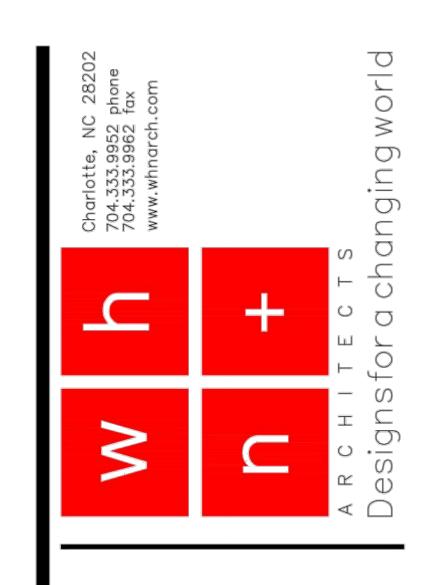
INSULATED GLASS

CLEAR INSULATED-

GLASS

GLASS STOREFRONT— DOOR





EXTERIOR FINISH LEGEND

BRICK - WHITE; FINAL SELECTION T.B.D.

GLAZING (OFFICE) - VITRO SOLARBAN 60, INSULATED CLEAR LOW-E

GLAZING (TOWER) - 1" INSULATED VITRO CLEAR STARPHIRE (LOW IRON) INSULATED TEMPERED GLASS U-FACTOR = 0.47,

ACM TOWER FASCIA PANELS - MATCH KAWNEER BLACK

DUMPSTER METAL PANELS - PRE-FINISHED BLACK

DUMPSTER, STEEL POSTS AND GATE FRAMES - PAINT SHERWIN WILLIAMS SW 6258 TRICORN BLACK

CURTAINWALL - KAWNEER BLACK

SHGC= 0.82. TEMPERED TYPICAL.

SLIDING DOOR - KAWNEER BLACK

METAL COPING - MATCH KAWNEER BLACK

PRE-FAB CANOPY - BLACK

ACM ACCENT BAND - BLACK

OH DOOR - BLACK

TEMPERED GLASS



Project No. 15227.147

Date Issued:

Revisions:

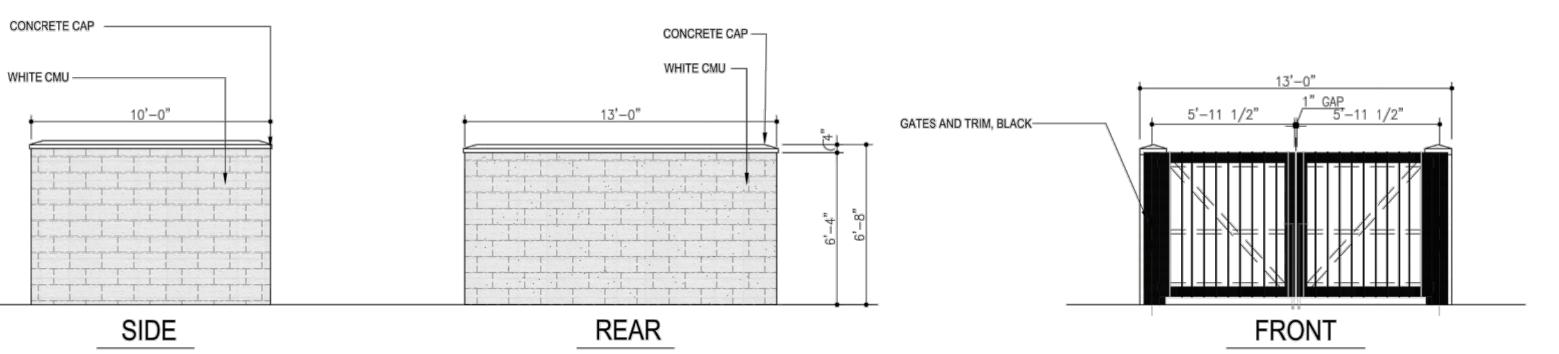
EXTERIOR ELEVATIONS

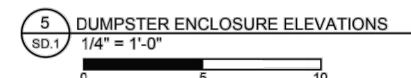
Sheet Title

SD.1 Sheet Number

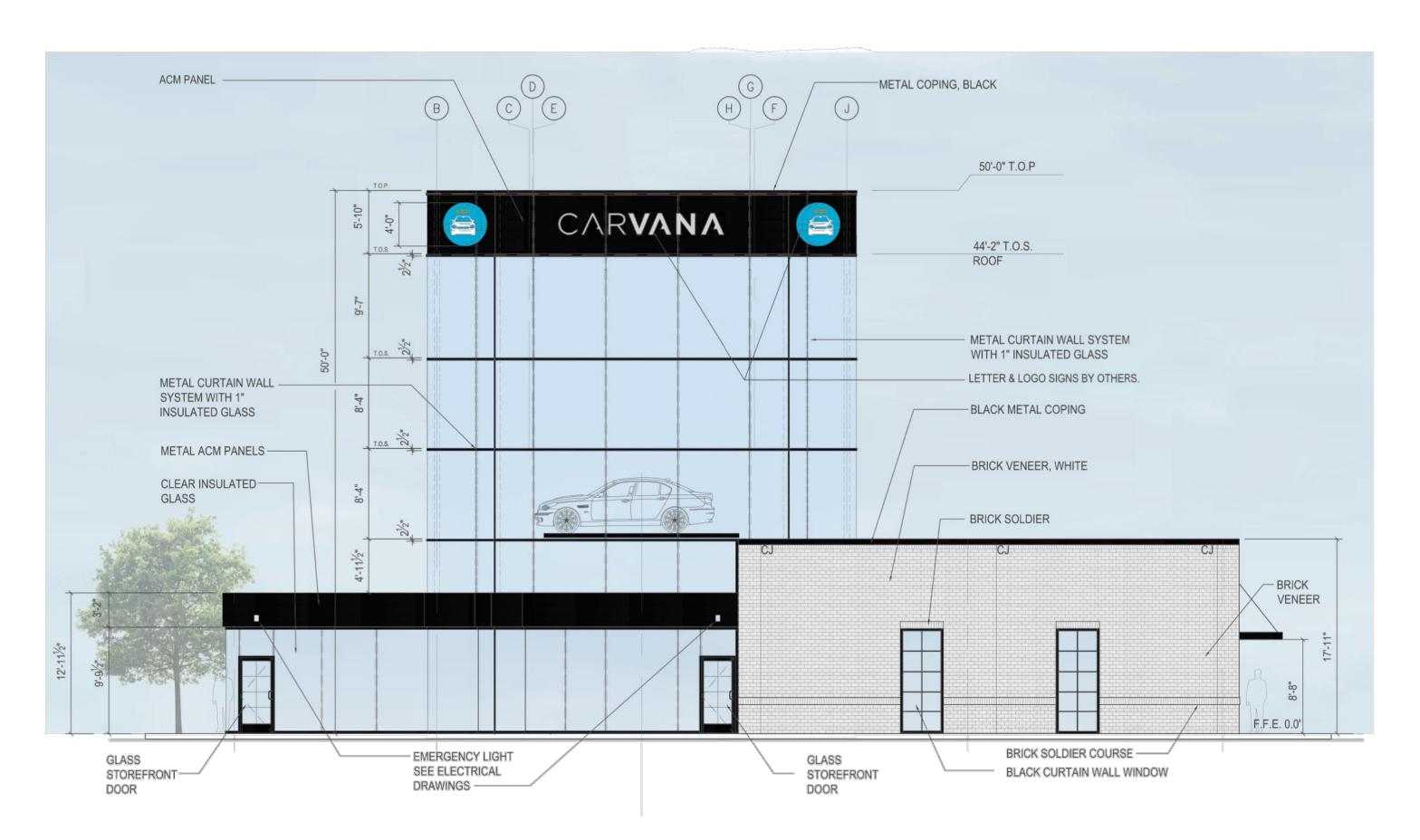
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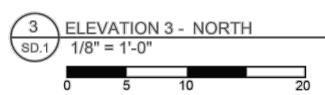
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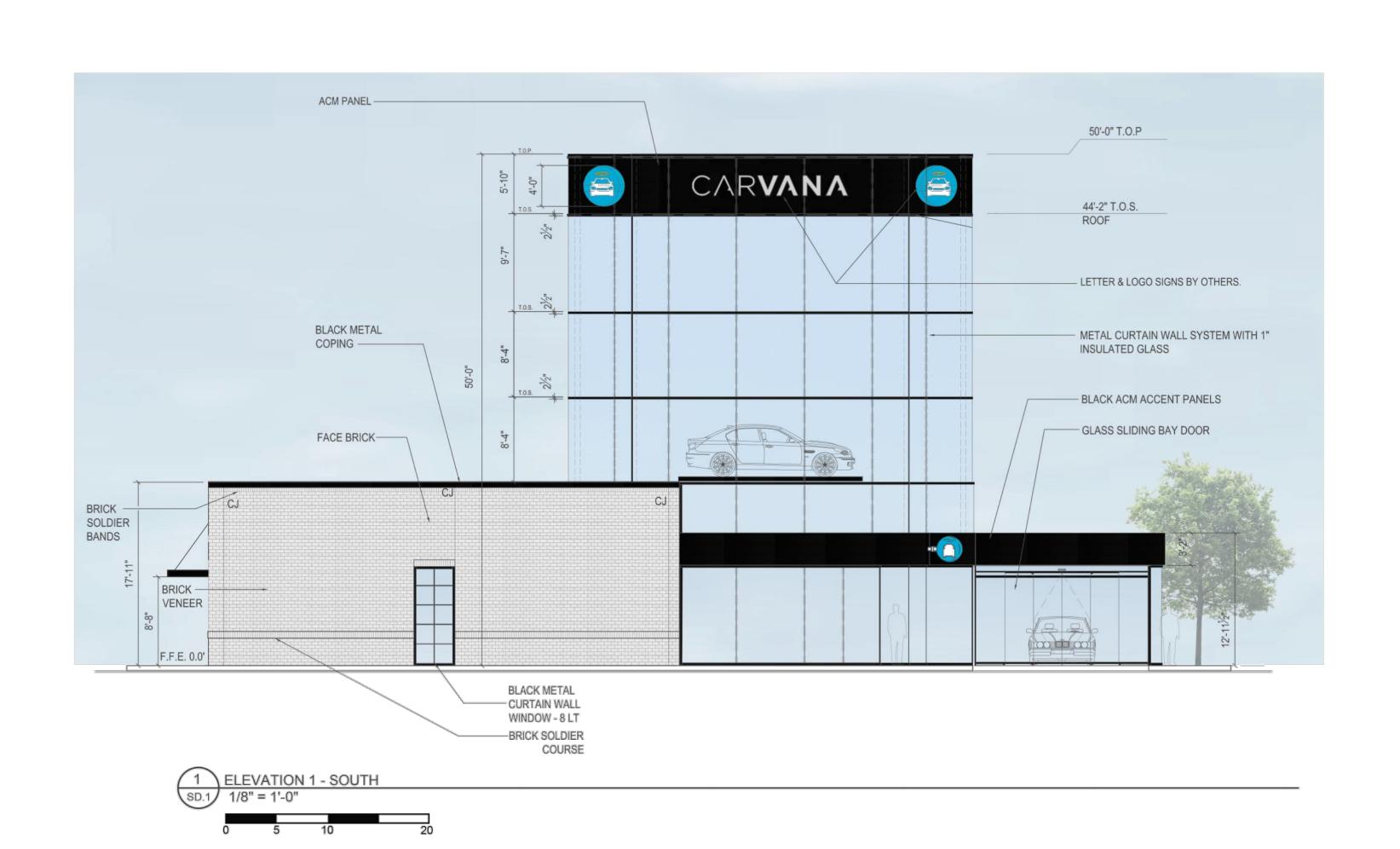


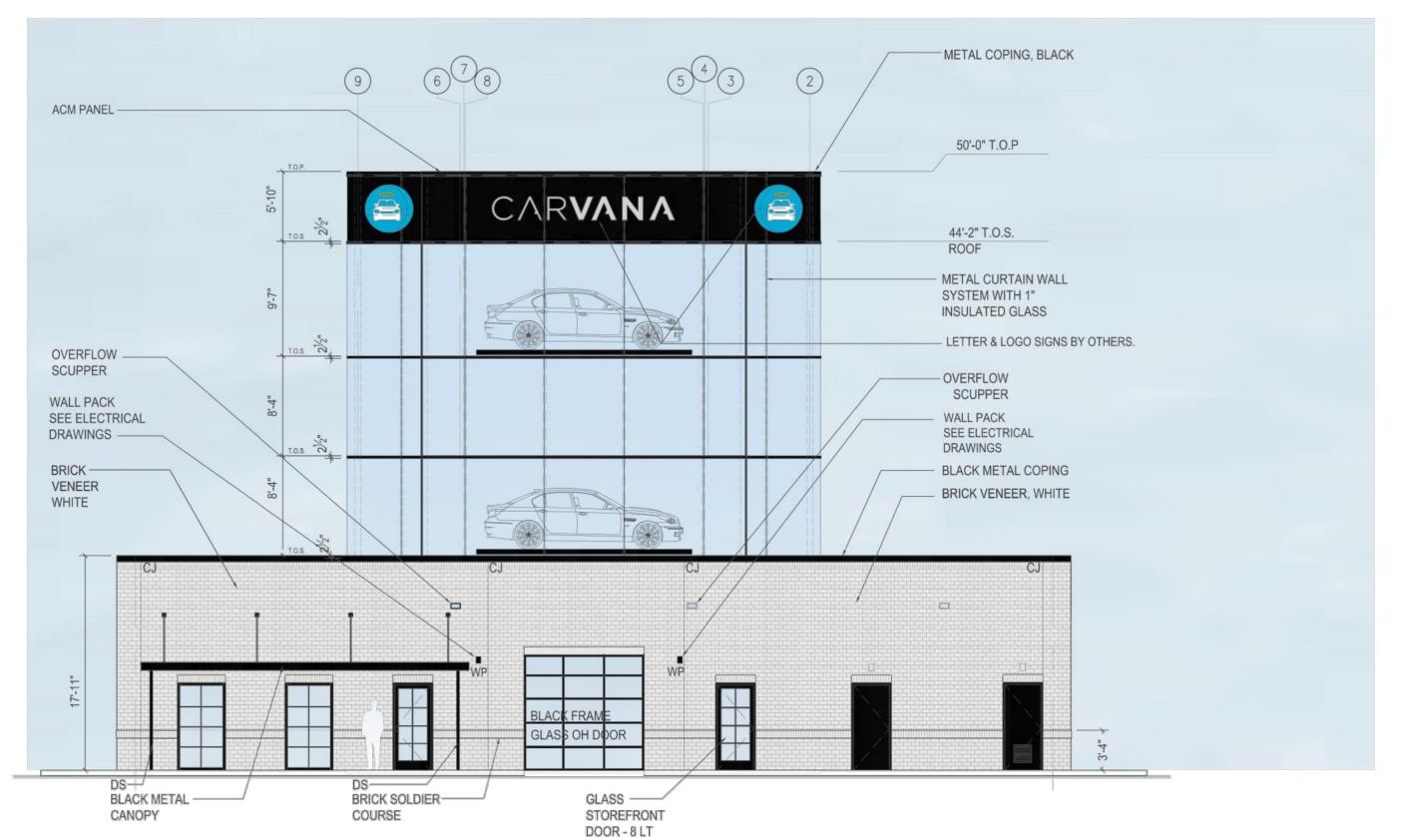


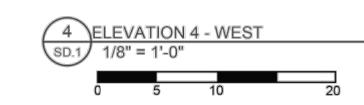


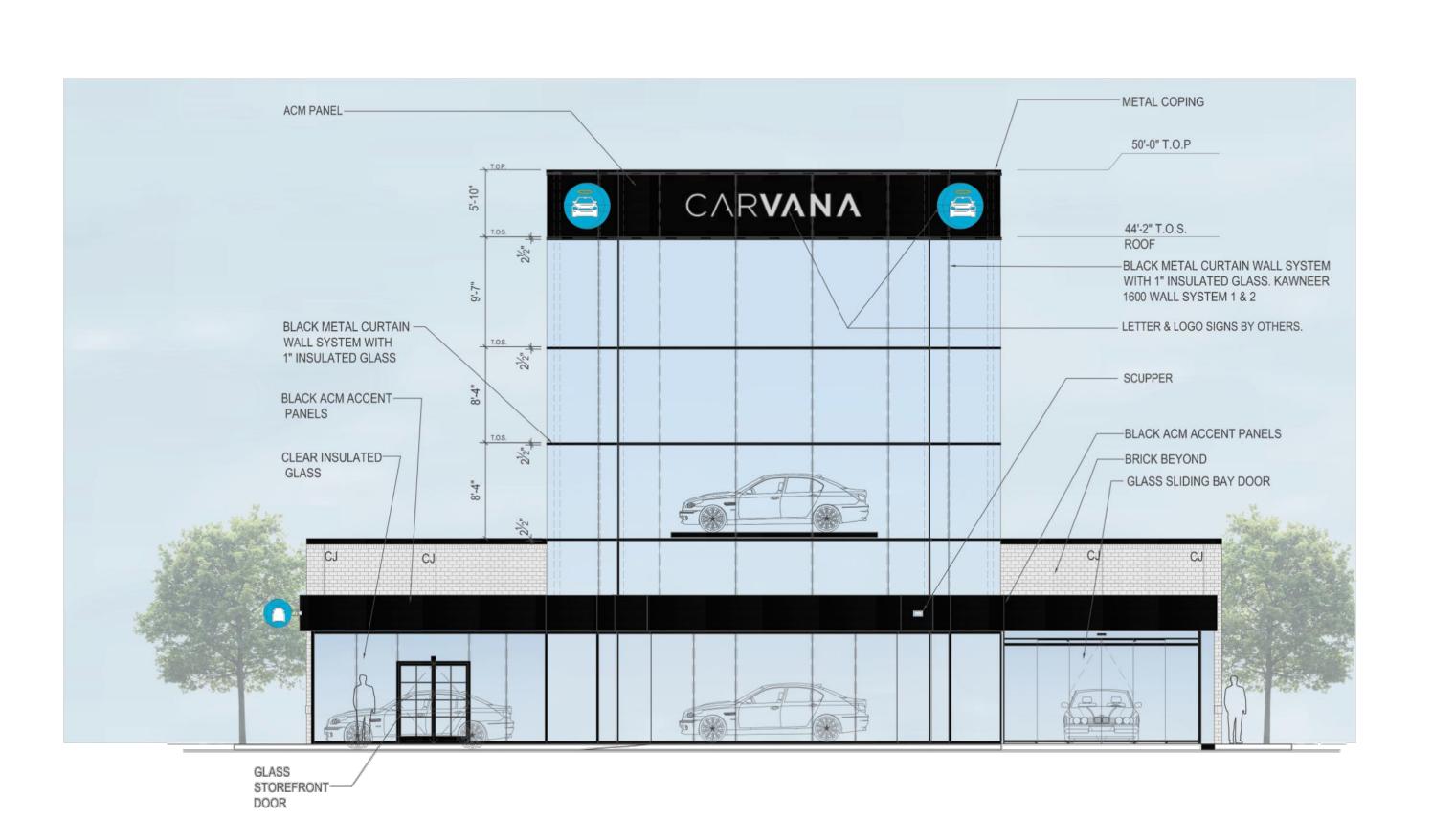












2 ELEVATION 2 - EAST 1/8" = 1'-0" 0 5 10 20 Charlotte, NC 28202
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A R C H I T E C T S

Designs for a changing world

EXTERIOR FINISH LEGEND

BRICK - WHITE; FINAL SELECTION T.B.D.

GLAZING (OFFICE) - VITRO SOLARBAN 60, INSULATED CLEAR LOW-E

GLAZING (TOWER) - 1" INSULATED VITRO CLEAR STARPHIRE

(LOW IRON) INSULATED TEMPERED GLASS U-FACTOR = 0.47,

CURTAINWALL - KAWNEER BLACK

SHGC= 0.82. TEMPERED TYPICAL.

METAL COPING - MATCH KAWNEER BLACK

PRE-FAB CANOPY - BLACK

TEMPERED GLASS



Project No. 15227.147

Date Issued:

Revisions:

Revisions:

1.

2.

3.

4.

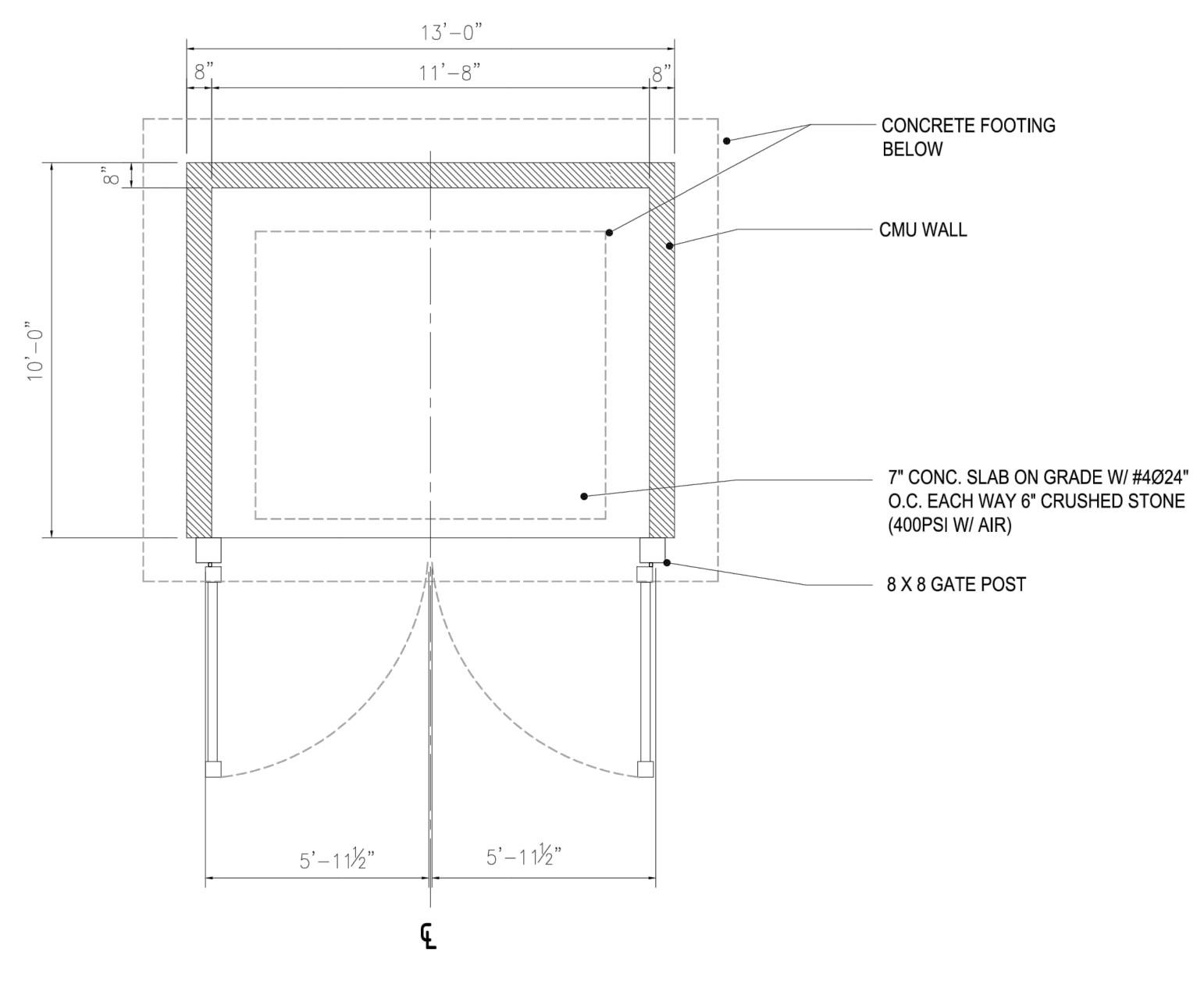
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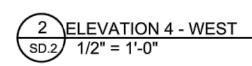
EXTERIOR ELEVATIONS

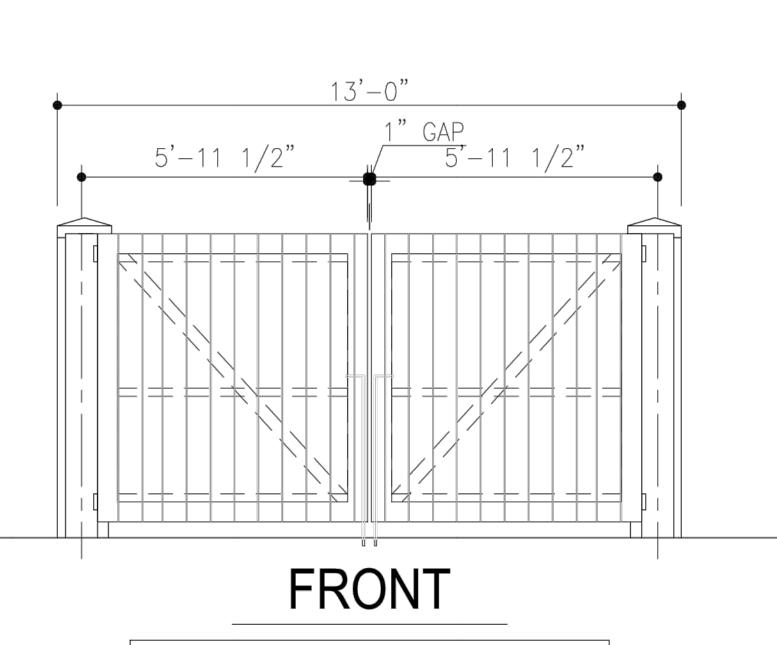
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Sheet Number

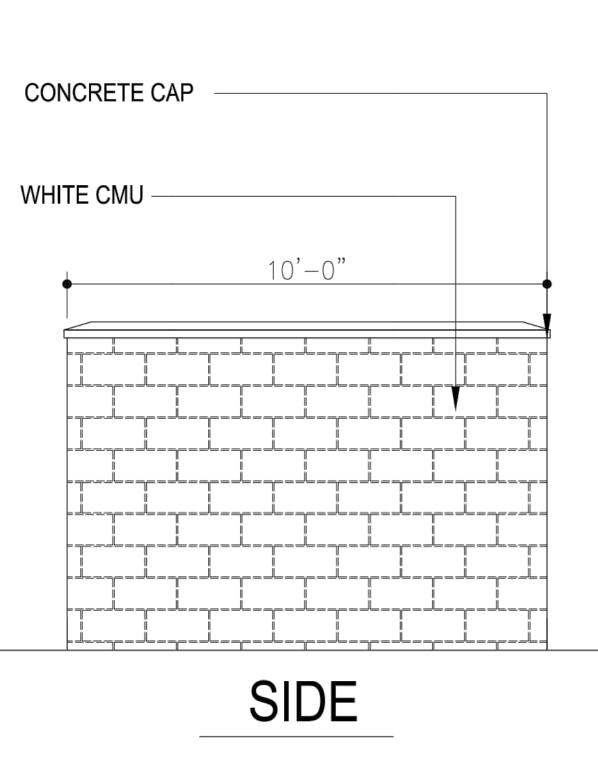
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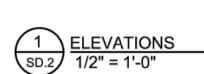






REFER TO CIVIL DWGS FOR DUMPSTER LOCATION





EXTERIOR FINISH LEGEND

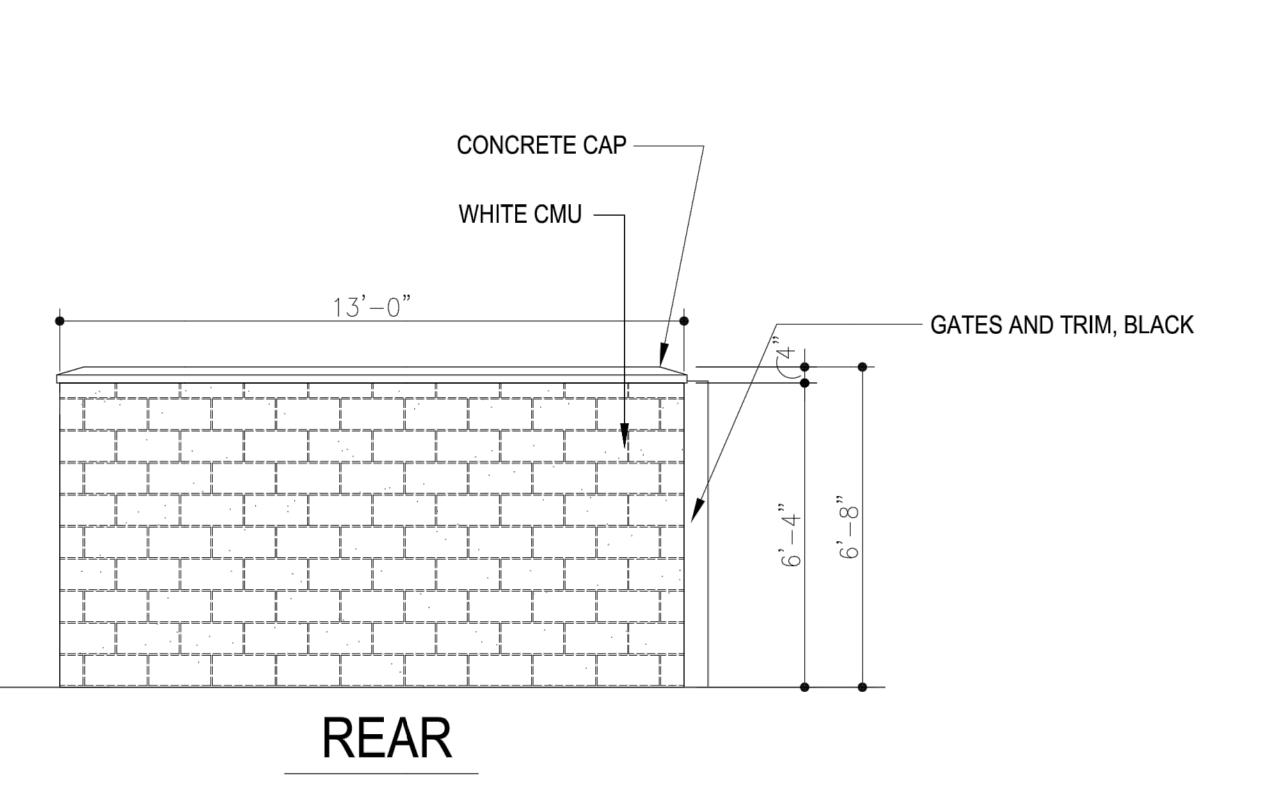
DUMPSTER, STEEL POSTS AND GATE FRAMES - PAINT SHERWIN WILLIAMS SW 6258 TRICORN BLACK

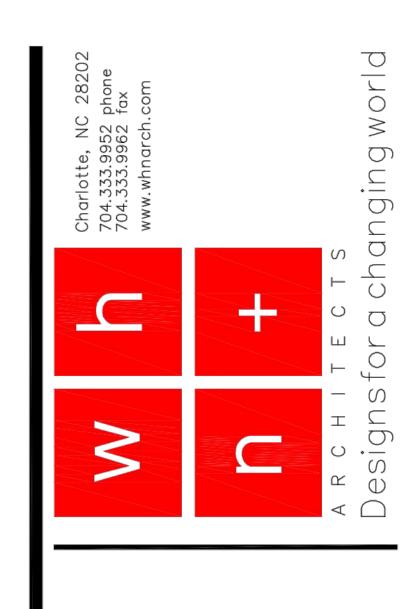
DUMPSTER METAL PANELS - PRE-FINISHED BLACK

TRASH MANAGEMENT STATEMENT:

DUMPSTERS SHALL BE EMPTIED IN ACCORDANCE WITH TOWN OF WEST HARTFORD CODE OF ORDINANCES.

A CONTRACT WILL BE ENTERED INTO WITH THE PROPOSED OWNER AND THE LOCAL REFUSE AUTHORITY FOR PICKUPS IN ACCORDANCE WITH TOWN CODES.







DUMPSTER PLAN AND

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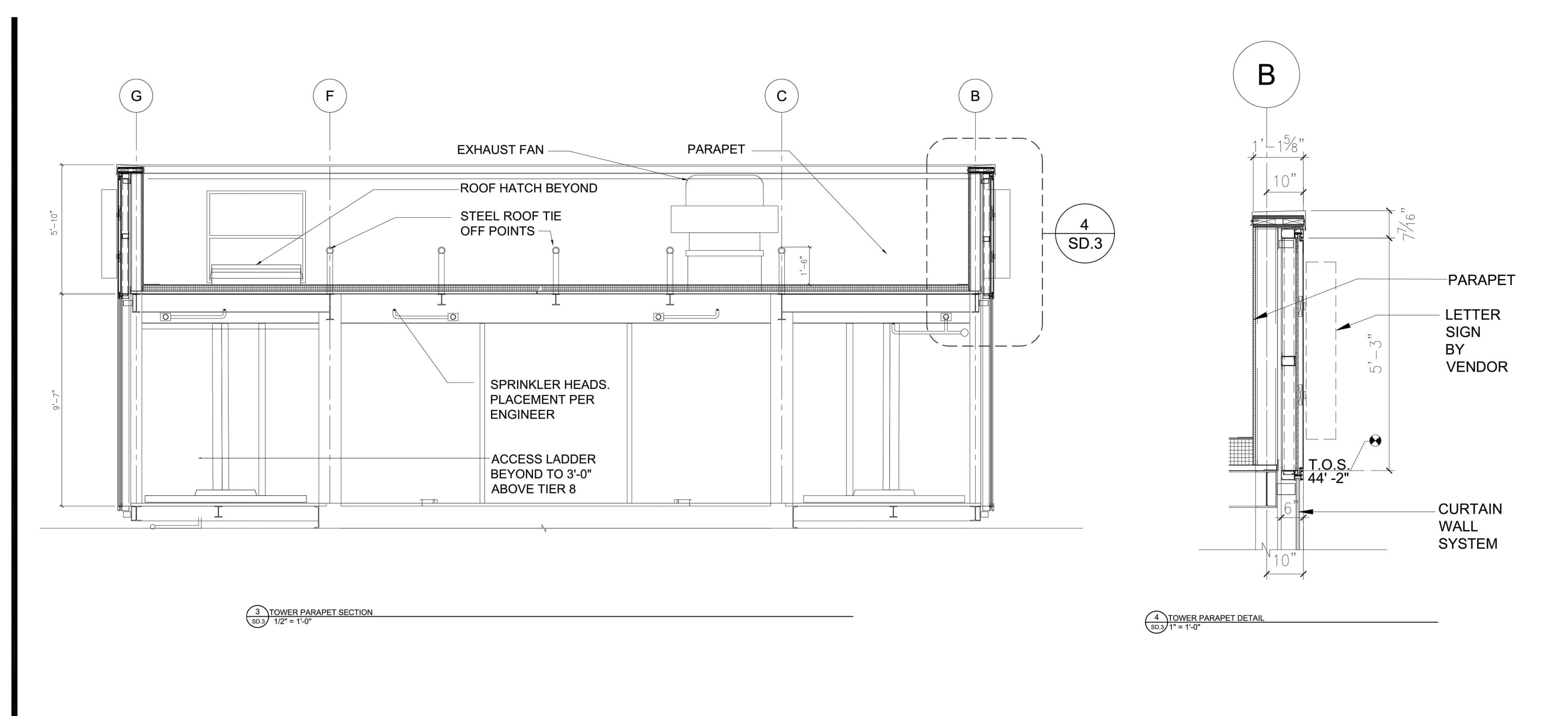
ELEVATIONS

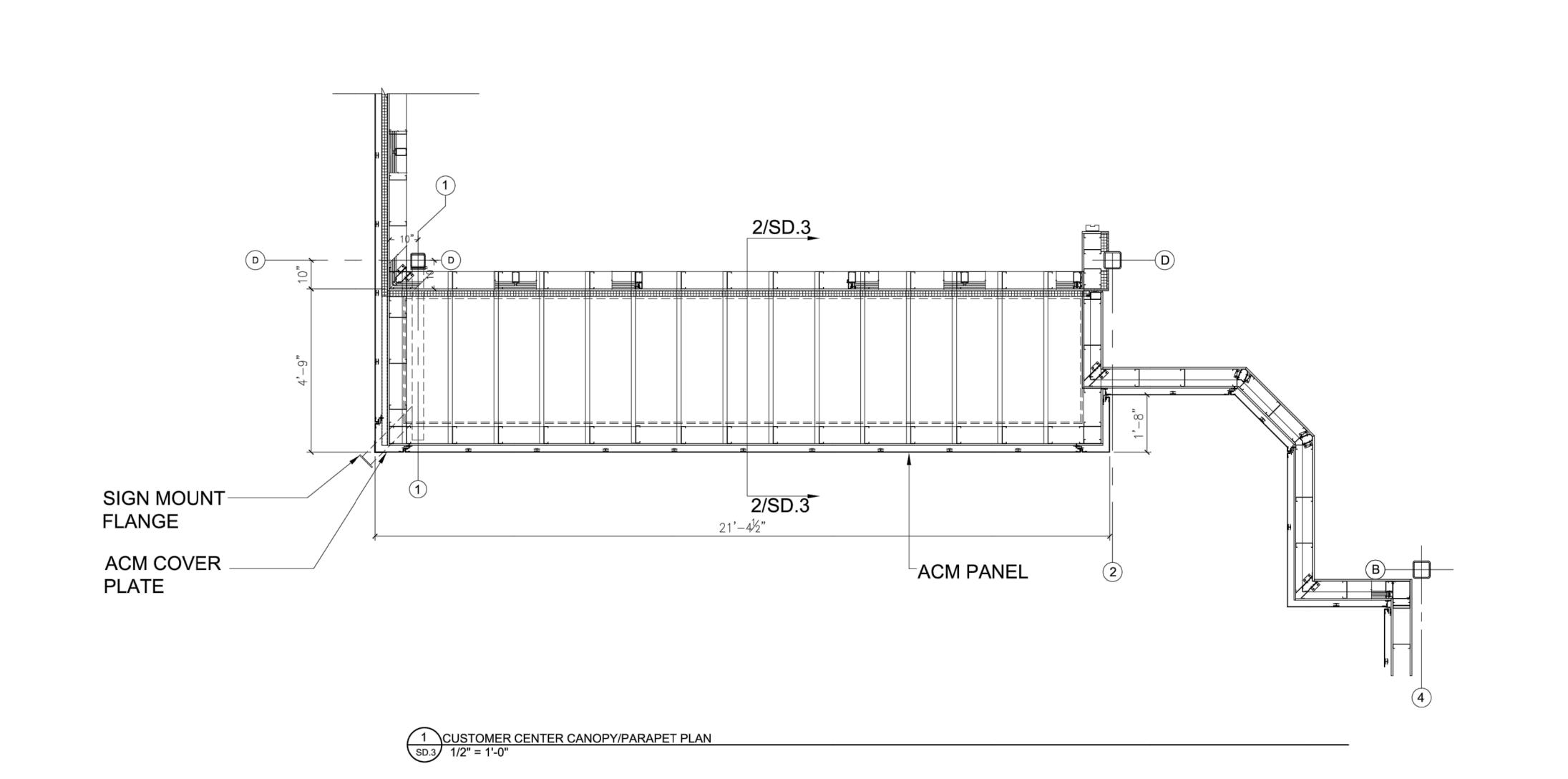
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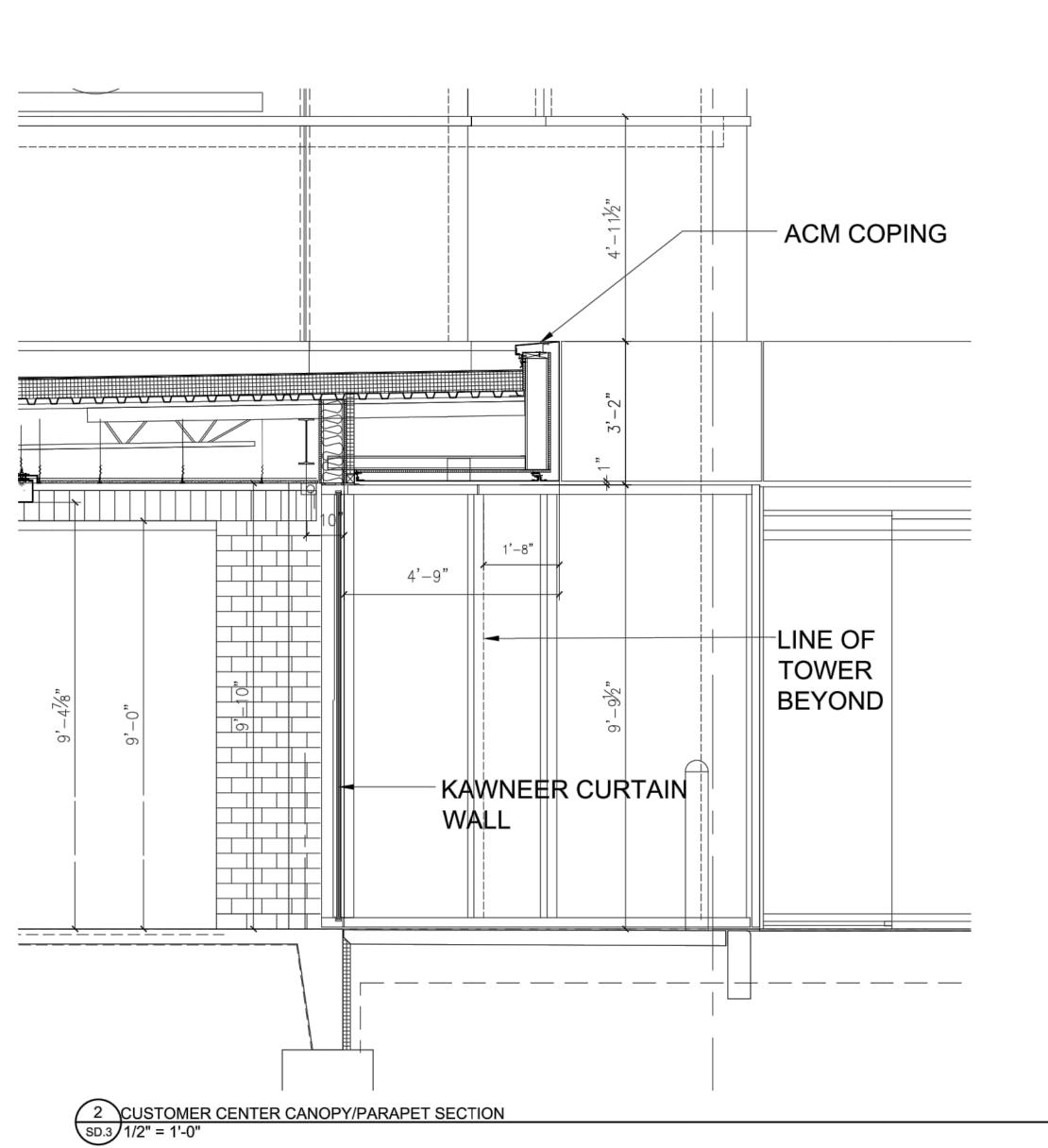
SD.2

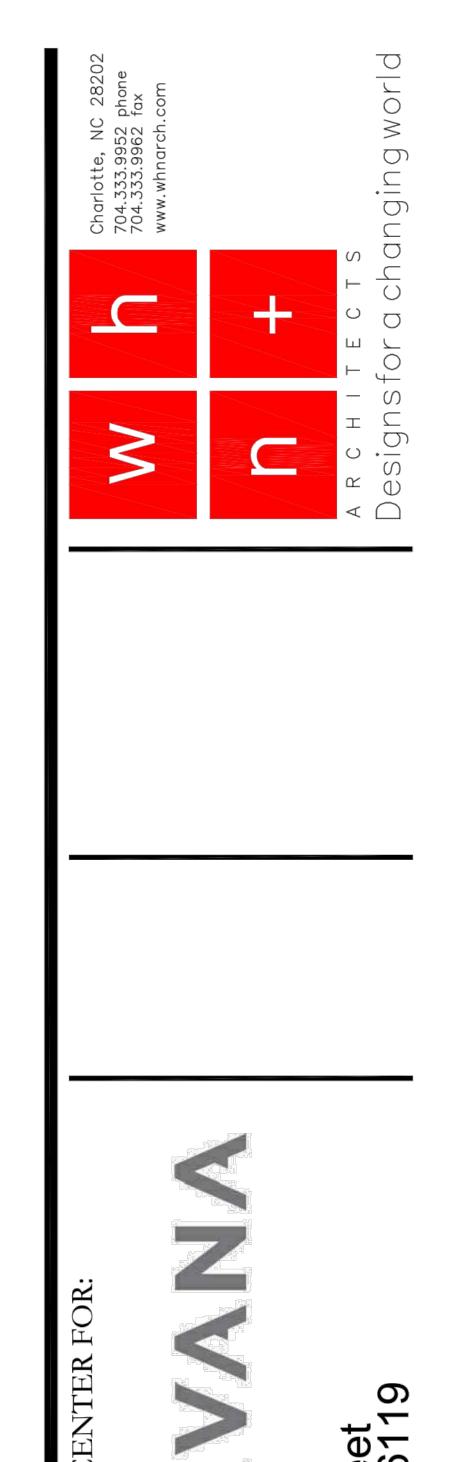
Sheet Number

Revisions:











Project No. 15227.147

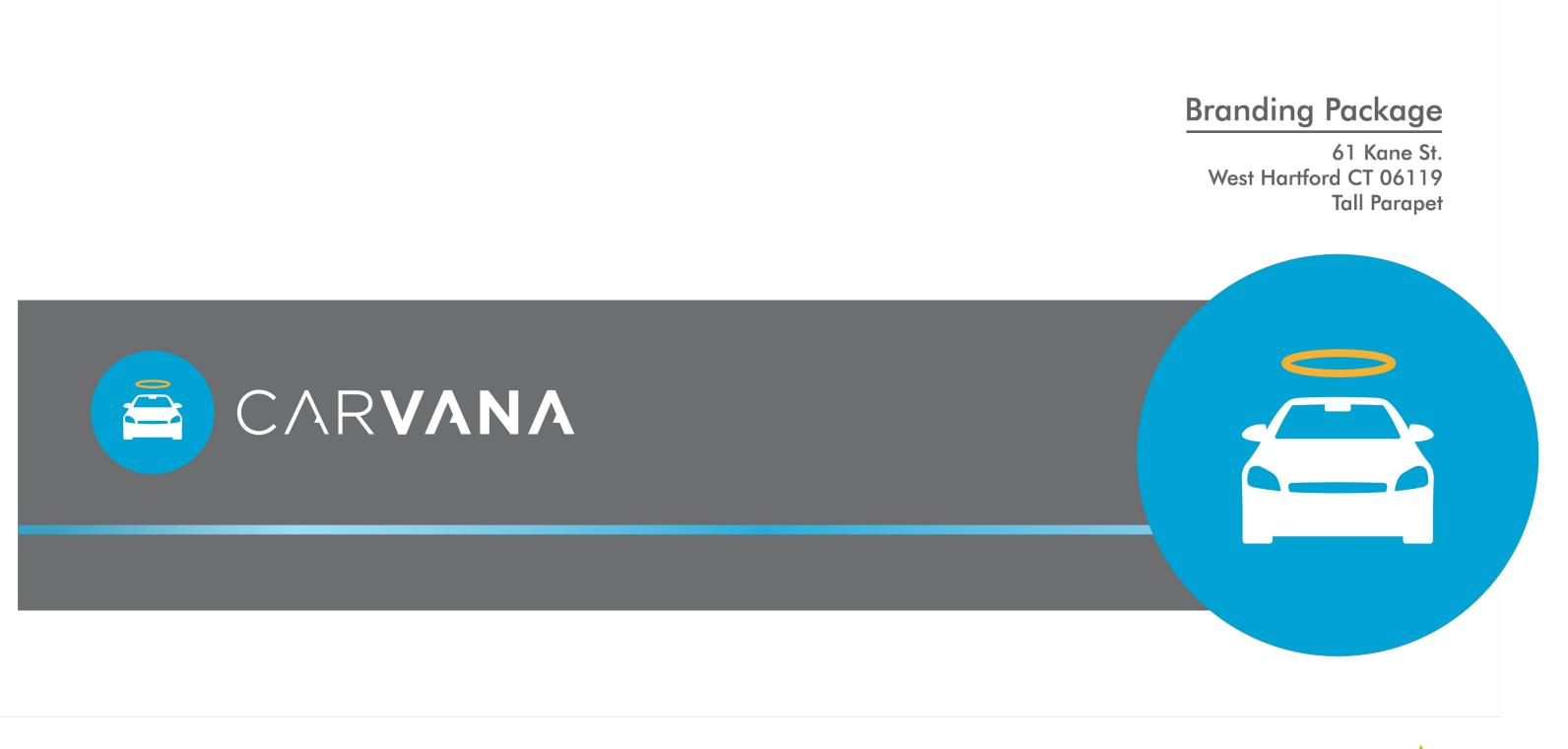
Date Issued: 4/22/2020 Revisions:

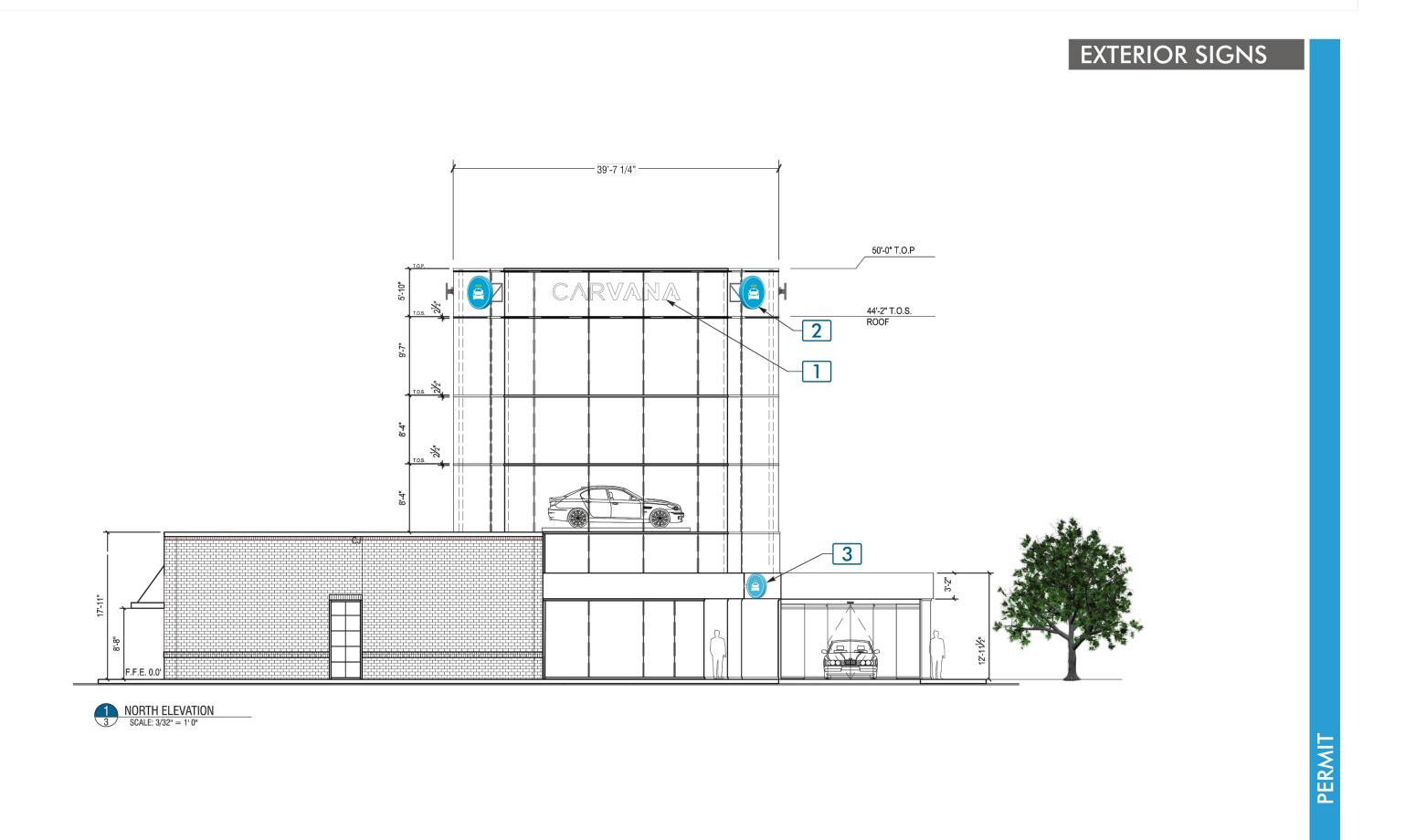
CANOPY/PARAPET DETAILS

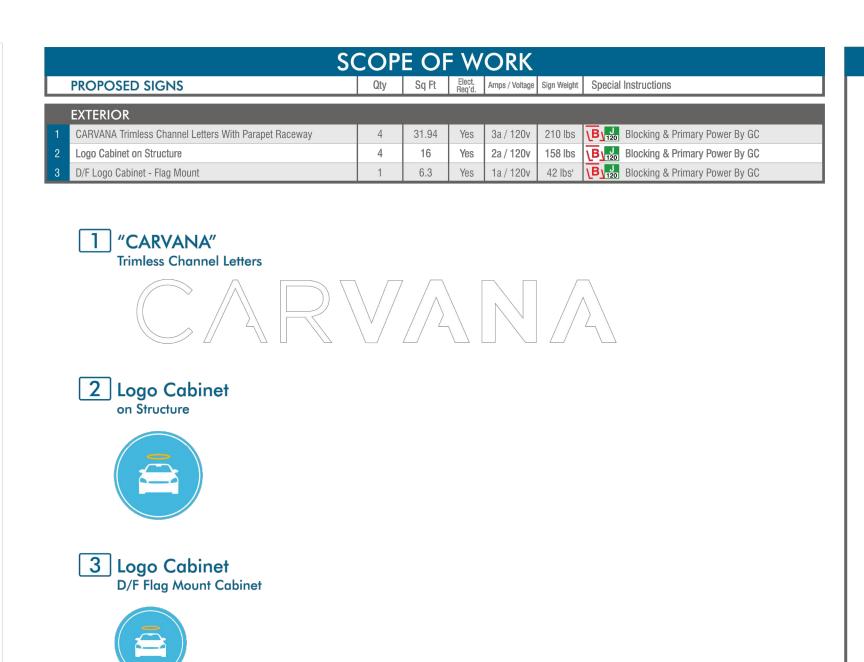
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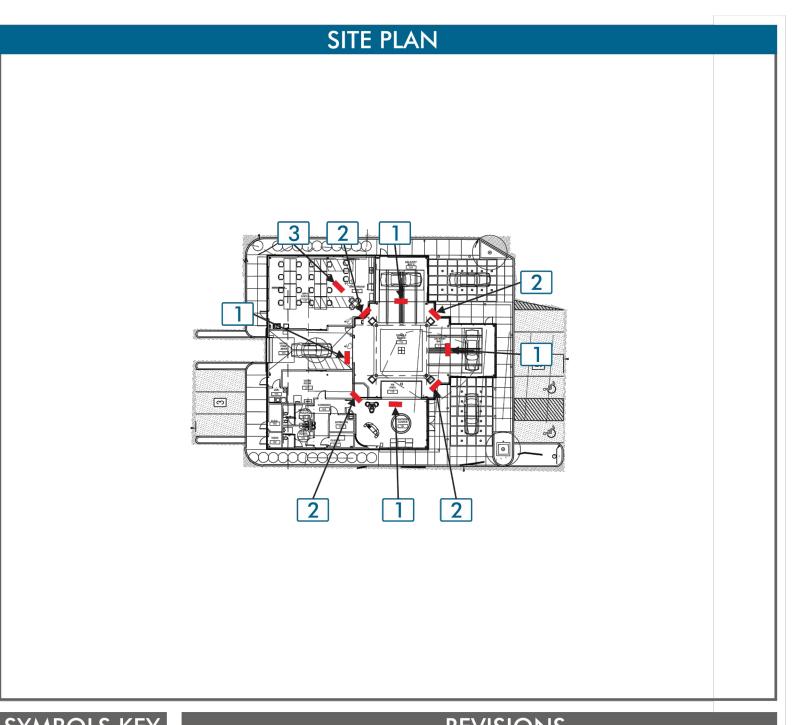
SD.3 Sheet Number

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51	MBOLS KEY			REVISIONS		
	DESCRIPTION:	REV#	DATE	REVISION NOTES:	BY	SHEET#
		2	2.21.20	reduces size signs 1 & 2	EMA	2,6,8
J 120	120 Volt Junction Box	3	2.25.20	Created Low Parapet Version of drawing & mounting	EMA	ALL
W	Elect Whip: 1/2"Ø x 6'-0" Lg Greenfield	4	2.26.20	removed rendering photo & raceway from elevations since u cant see it	EMA	ALL
PS	LED Power Supply	5	2.26.20	Replaced Site Map, edited measurements	WA	2,3
B _J	Blocking Req'd	6	2.27.20	Removed LED lighting, and edited elevations	WA	ALL
S	Additional Structure Req'd.					
A	Special Condition Applies	-				\vdash
\boxtimes	Access Panel - Field Cut	-				
1	Additional Information Req'd.					
X	Remove					\square
	Remain As-Is	<u> </u>				
	Relocate					



Cima Network Inc.
121 New Britain Blvd.
Chalfont, PA 18914

office: 267.308.0575
fax: 267.308.0577
www.cimanetwork.com

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All Electric Signs to be manufactured to meet the requirements of UI 48 and installed to meet the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign.

SIGN 1

DESCRIPTION

EST WEIGHT: 210 lbs

COLORS & FINISHES
PF1. FACES: #2447 White

Exterior, LED Illuminated Trimless Channel Letters

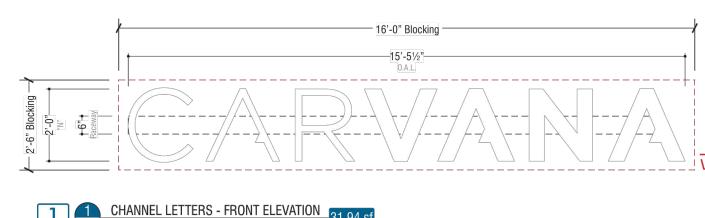
EST ELECT LOAD: (3.0) Amps @120 Volt ELECT REQUIREMENTS: (1) 20 Amp/120 Volt Circuits

CHANNEL LETTER SPECIFICATIONS

P1. RETURNS: To Match PMS Cool Grey 9 (Satin Fin)

3. BACKS: .063" Routed Aluminum Stapled To Returns 4. DRAIN HOLES: 1/4"Ø With Light Baffles

Address: 61 Kane St. West Hartford CT 06119



1 CHANNEL LETTERS - FRONT ELEVATION
SCALE: 3/8" = 1'0"
31.94 sf (4) REQ'D

– 39'-7 1/4" **VIF** –

27'-2 15/16" **VIF**

of Building & Proposed Signage

3 ELEVATION - TYPICAL VENDING TOWER (4 SIDED)
SCALE: 1/8" = 1' 0"

2 SIDE VIEW 4 SCALE: 3/8" = 1'0"

ELECTRICAL (SIGN TO BE UL LISTED)
5. LEDS: Internally Illuminated With White Leds 6. WIRE: Secondary Low Voltage Led Wire 7. PASS THRU: Paige Wallbuster Or Approved Equal.

SIGN CONSTRUCTION

1. RETURNS: .063" Aluminum Stapled To Backs
2. FACES: 1/2" Thick Shoulder Routed Acrylic

8. RACEWAY: Aluminum Raceway On Backside Of Parapet Wall. Raceway To Be Concealed Behind Wall

9. POWER SUPPLY: Class 2 Power Supply 1/2" Off Bottom 10. SERVICE SWITCH: Located On End Of Raceway 1. PRIMARY: 1/2" Conduit Secured To Wall w/ Straps

INSTALLATION HARDWARE
12. HARDWARE: 3/8"Ø Non-corrosive Wood Screws To Pass Through Wood Blocking. Min (4) Per Letter

BUILDING & FASCIA CONDITIONS

13. PARAPET WALL: ACM Over 3/4" FRT Plywood & Moisture Barrier By Others 14. **BLOCKING:** Plywood Blocking To Fill Space Tight To Back Of ACM By Others. Must Be Attached To Building Structure To Carry Weight Of Sign

4. Seal All Building Penetrations.

CHANNEL LETTER INSTALLATION NOTES: Sufficient Primary Dedicated Circuit Within 5' Of Center Of Sign By Others. Final Primary Hook-up By Sign Installer Where Allowed By Local Codes. 3. All Visible Wiring & Conduit To Be Run In Straight Lines &

5. Mounting Hardware By Sign Installer Unless Otherwise





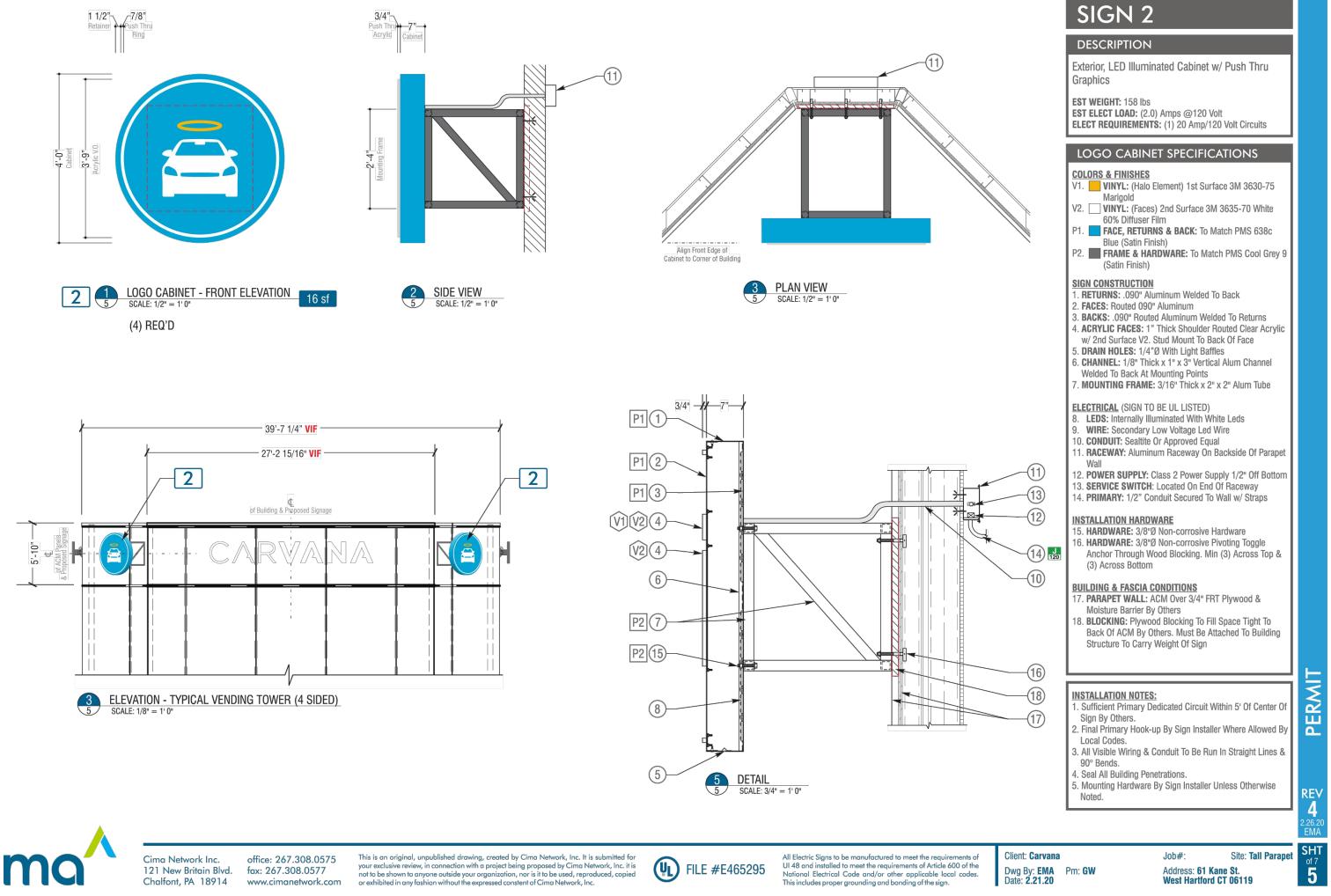


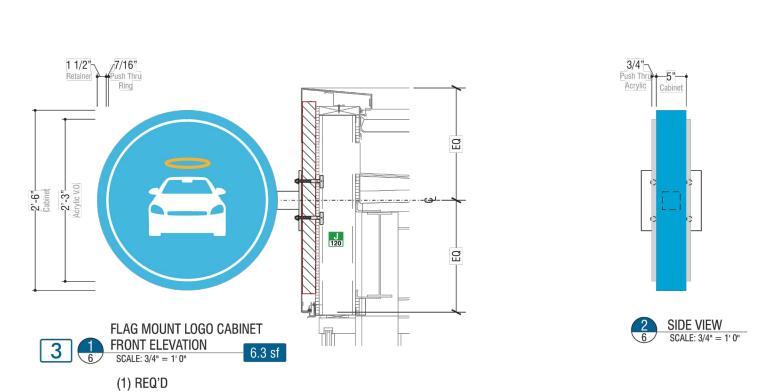


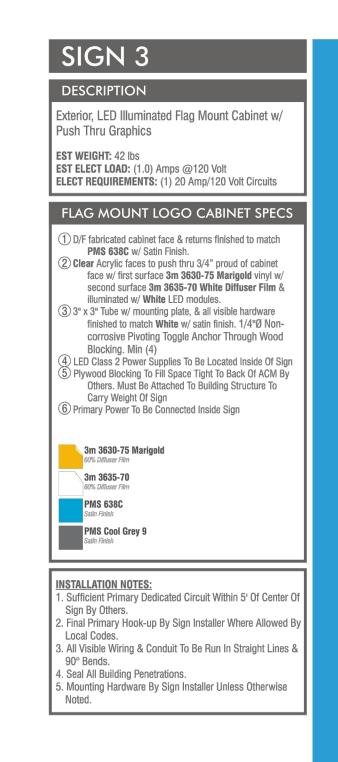












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